Cl **00** *SC* **0** *P* *L* # 611

Dambrosia, John Force 10 Networks Inc

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

Global - Plots of insertion loss, return loss, crosstalk limits are inconsistent. Some plots do not indicate where the pass regions are, but others do and use various terminologies to indicate where the acceptable region is - "Acceptable Region", "Recommended Region", "Pass Region", "Compliant Region"

SuggestedRemedy

Be consistent on all graphs regarding whether a pass region will be indicated. If the pass region is to be indicated, then use consistent terminology to indicate that region.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Discuss consistent labeling of regions (in graphs) in the Task Force.

Cl **00** *SC* **0** *P* *L* # 900

Ganga, Ilango Intel Corporation

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

Check for style regarding the use of notes embedded in the tables, for example Tables 80-3 through 80-5.

SuggestedRemedy

Update the column notes in Tables (if applicable) as per IEEE style requirements.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

As per IEEE Style manual section 15.4:
"A note to a table is informative. A footnote to a table is normative. This distinction should be kept in mind when determining whether information should go in a table note or a table footnote."

In Table 81-5 split the NOTE into two, with the first sentence as is, but the following sentence is : "All other values in lanes 1 to 3 not shown in this table are reserved. The link fault signaling state diagram allows future standardization of reserved Sequence ordered sets for functions other than link fault indications."
should be put into the text above the table, and reworded to fit in.

Clauses 81-88: Table on first page of PICS: Change NOTE 1, 2, 3 to NOTE 1, NOTE 2, NOTE 3 as applicable

Cl **00** *SC* **0** *P* *L* # 899

Ganga, Ilango Intel Corporation

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

Check for style regarding the use of notes NOTE1 and NOTE2 embedded in the layer diagram figures, for example Figures 80-1 through 80-5 and 82-1, 83-1 etc.,

SuggestedRemedy

Update the notes embedded in the figures (if applicable) as per IEEE style requirements.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

As per the IEEE Style manual section 16.3:
"A note to a figure is informative. A footnote to a figure is normative. This distinction should be kept in mind when determining whether information should go in a figure note or a footnote."

Notes in Figures 80-1 through 80-5 and 81-1, 82-1, 83-1 and 88-2 are informative and hence the NOTE(s) in figures need not be changed.

In Fig 82-10 and Fig 82-11 change "Note -" to "NOTE-"(em dash)
In Fig 83-5, change footnote numbering from 1,2,3 to a,b,c
In Fig 83-6, change colon to em dash after the word NOTE
In Fig 85-2 and 85-16 change NOTE to footnote

Cl **00** *SC* **0** *P* *L* # 897

Ganga, Ilango Intel Corporation

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

Check and update the subclause numbering style for new subclauses inserted by 802.3ba, as appropriate, if appliable to this amendment. Especially the new subclauses inserted by 802.3ba: Clauses 45, 73, 74 etc.,

SuggestedRemedy

Update the numbering style for inserted subclauses if applicable to 802.3ba

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See response to comments #389, #754, #767 and #824

Cl **00** *SC* **0** *P* *L* # 392

Anslow, Peter Nortel Networks

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

The draft is inconsistent on whether to use "AC coupling or AC coupled" or "AC-coupling or AC-coupled".

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The same inconsistency exists in the base standard as well.

Change all instances to "AC coupling" or "AC coupled" to be consistent in P802.3ba.

Cl **00** *SC* **0** *P* *L* # 823

Goergen, Joel Force 10 Networks Inc

Comment Type **GR** *Comment Status* **D**

Module channel model is not production manufacturable.

SuggestedRemedy

Still simulating the models and cannot provide input at thus time.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Discuss the simulation data in the Task Force. See gourgen_01_0110.

Cl **00** *SC* **0** *P* *L* # 393

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* *L* # 348

Nikolich, Paul YAS Broadband Ventu

Comment Type **G** *Comment Status* **D**

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

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

No change to the draft.
The other two comments #346, #347 from the commenter have been classified as TR comments (must be satisfied).

Cl **00** *SC* **0** *P* **0** *L* **0** # 143

Hajduczenia, Marek ZTE Corp.

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

The draft has many blank pages. Please remove them

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The document is configured to start new chapters (Clauses) with odd numbered pages. Hence blank pages are inserted at the end of a Clause or Annex to start the new page to the right (odd numbered page), so a printed document will have chapters starting at the right.

Cl **00** *SC* **0** *P* **1** *L* **22** # 791

Ghiasi, Ali Broadcom

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

Single mode objective was added late to the 802.3ba project per motion from barbieri_02_0308. Single mode 40GbE objective was added with broad market support from users, OEMs, and component suppliers. As a group however we failed to see early on that we need to extend nPPI so it can support 40Gbase-LR4.
The sheer size of the retimed interface forces the 40Gbase-LR4 into modules 4-10x the size of the QSFP module which is the choice for 40Gbase-SR4 PMD. The choices are to build a line card with high density and forgo single mode support or build a line card with <1/5 the aggregate BW possible with 40Gbase-SR4!

SuggestedRemedy

Extend the nPPI X4 to support 40Gbase-LR4, for detail implementation see comments on CL86 and 87 and king_01_0110

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Discuss in the Ballot Review committee. See presentation king_01_0110.

See response to comments #792 & #793

Cl **00** *SC* **0** *P* **23** *L* **47** # 610

Dambrosia, John Force 10 Networks Inc

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

listing of projects that ran in parallel with IEEE P802.3ba are incomplete and should be updated. IEEE P802.3az is also modifying clauses that IEEE P802.3ba is modifying.

SuggestedRemedy

Add reference to IEEE P802.3az in editor's note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Update the Editor's note on page 23 to reflect the current parallel projects: e.g., P802.3az and remove reference to approved projects.

Cl **01** *SC* **1** *P* **1** *L* # 391

Booth, Brad AMCC

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

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

SuggestedRemedy

Change all references for S to mean short wavelength (850nm).
Change all references for L to mean long wavelength (1310nm).
Change all references for E to be Z and to mean optimized long wavelength (1310nm).

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The nomenclature was adopted by the Task Force in May 2008 (see motion #2). The adopted nomenclature was presented to the WG by the TF Chair during Jul'08 opening plenary.

The Task Force has discussed the nomenclature extensively during the WG ballot phase including the evolution of PHY naming conventions (see law_01_0709). The task force did discuss the consistency issue; during the discussions it was pointed out the nomenclature evolved as needed from 10M to 10G and that the base document already uses same letter(s) to identify different characteristics.

The nomenclature employed by P802.3ba is clearly documented in Table 80-2 and the port type definition (for e.g. "100GBASE-CR10") includes the characteristics/attributes of the port type. Individual letters are not used to distinguish different characteristics/attributes.

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

Thompson, Michael Pentair Electronic Pac

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

There is a newer version of this standard available.

SuggestedRemedy

IEC 61280-1-4:2009

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #394

Cl **01** *SC* **1.3** *P* **25** *L* **20** # 283

Dawe, Piers J G Independant

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

Insert reference for new IEC 61280-1-4:2009 Fibre optic communication subsystem test procedures - Part 1-4: General communication subsystems - Light source encircled flux measurement method.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #394

Cl **01** *SC* **1.3** *P* **25** *L* **23** # 394

Anslow, Peter Nortel Networks

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

Since Ed 2.0 of IEC 61280-1-4 is now published (See http://webstore.iec.ch/webstore/webstore.nsf/artnum/043535) update reference and remove Editor's note.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **01** *SC* **1.3** *P* **25** *L* **26** # 10

Hajduczenia, Marek ZTE Corp.

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

All ITU-T references are dated per their publication. G.694.1 should be dated 2002 (see http://www.itu.int/rec/T-REC-G.694.1/en)G.694.2 should be dated 2003 (see http://www.itu.int/rec/T-REC-G.694.2/en)

SuggestedRemedy

Add the date to G.694.1 and G.694.2 references per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

As per IEEE style manual, undated references are allowed (unless specificity is required). When specific dates are not included in the reference, the reader is expected to refer to the latest version.

Check if specific dates are essential for these two references.

Cl **01** *SC* **1.3** *P* **25** *L* **45** # 395

Anslow, Peter Nortel Networks

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

If this IEC document is going to be published in time for 802.3ba to reference it, then it must be going through the IEC balloting process already.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Check and update references to CR4 style 1 and CR10 MDI connectors.

Cl **01** *SC* **1.3** *P* **25** *L* **5** # 4

Maguire, Valerie The Siemon Company

Comment Type **G** *Comment Status* **D**

Add Normative Reference to TIA Standard specifying OM3 performance

SuggestedRemedy

Add, "ANSI/TIA-568-C.3:2008, Optical Fiber Cabling Components Standard."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See response to comment #7

Cl **01** *SC* **1.5** *P* **27** *L* **30** # 396

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **01** *SC* **1.5** *P* **27** *L* **32** # 367

Ganga, Ilango Intel Corporation

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

[Editor's note: Comment 52 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
LSB and MSB don't denote proper names. This was nearly right in an earlier draft.

SuggestedRemedy

Change "Least Significant Bit" to "least significant bit", change "Most Significant Bit" to "most significant bit".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment # 396

Cl **30** *SC* **30.3.2.1.2** *P* **31** *L* **9** # 258

Trowbridge, Stephen ALCATEL-LUCENT

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

P802.3ba PMDs are all comprised of multiple physical lanes and multiple PCS lanes. Future interfaces, e.g. under investigation by the 40Gb/s Ethernet Single-mode Fibre PMD Study Group, may not be multiple physical lanes but will still be multiple PCS lanes

SuggestedRemedy

Change "40 Gb/s multi-lane 64B/66B" to "40 Gb/s multi-PCS lane 64B/66B" and "100 Gb/s multi-lane 64B/66B" to "100 Gb/s multi-PCS lane 64B/66B". Same change in sub-clause 30.3.2.1.3 lines 18-19

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.3.2.1.5** *P* **31** *L* **50** # 397

Anslow, Peter Nortel Networks

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

Since P802.3av is now an approved amendment, the draft should refer to that rather than P802.3av Draft 3.4.

SuggestedRemedy

Change to "as modified by IEEE Std 802.3av-2009" (Is this the correct format?)
Make this change here and throughout clause 45 (12 instances)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.5.1.1.11** *P* **34** *L* **1** # 766

Barrass, Hugh Cisco Systems, Inc.

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

There needs to be a management object that supports BIP errors.

SuggestedRemedy

Insert a new subclause 30.5.1.1.11a after 30.5.1.1.11: aBIPErrorCount - ATTRIBUTE - APPROPRIATE SYNTAX: - A SEQUENCE of generalized non-resettable counters. Each counter has a maximum increment rate of 10 000 counts per second for 40 Gb/s implementations and 5 000 counts per second for 100 Gb/s implementations. - BEHAVIOUR DEFINED AS: - For 40/100GBASE-R PHYs, an array of BIP error counters. The counters will not increment for other PHY types. The indices of this array (0 to N - 1) denote the PCS lane number where N is the number of PCS lanes in use. Each element of this array contains a count of BIP errors for that PCS lane. - Increment the counter by one for each BIP error detected during alignment marker removal in the PCS for the corresponding lane. - If a Clause 45 MDIO Interface to the PCS is present, then this attribute will map to the BIP error counters (see 45.2.3.37 and 45.2.3.38).; - also add the attribute to Table 30-1e (before aIdleErrorCount).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.5.1.1.15** *P* **34** *L* **39** # 11

Hajduczenia, Marek ZTE Corp.

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

'PCS lanes' - this concept has not been defined in Clause 30 or before for that matter. Provide reference to where such concept is defined / used for the first time for readers who do not read standards from the back.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

PCS lane (PCSL) is defined in Clause 1.4, this is generally considered to be closer to the front of the document.

Cl **30** *SC* **30.5.1.1.2** *P* **32** *L* **31** # 398

Anslow, Peter Nortel Networks

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

The "10G PCS Control 2" register has been re-named to the "PCS Control 2" register

SuggestedRemedy

Change "10G PCS Control 2" to "PCS Control 2". Also the reference is duplicated at the end of the sentence, so do not add "and the PCS control 2 register specified in 45.2.3.6"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.6.1.1.5** *P* **35** *L* **44** # 5

Maguire, Valerie The Siemon Company

Comment Type **G** *Comment Status* **D**

1000BASE-T is suitable for operation over all twisted-pair media types of the correct category.

SuggestedRemedy

Change "UTP" to "twisted-pair"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The "UTP" is not consistent with other PHY types. Delete "UTP" in 2 instances.

Note that this is a change to the base document and is not related to 40/100G.

Cl **30** *SC* **30.6.1.1.5** *P* **35** *L* **45** # 6

Maguire, Valerie The Siemon Company

Comment Type **G** *Comment Status* **D**

1000BASE-TFD is suitable for operation over all twisted-pair media types of the correct category.

SuggestedRemedy

Change "UTP" to "twisted-pair"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The "UTP" is not consistent with other PHY types. Delete "UTP" in 2 instances.

Note that this is a change to the base document and is not related to 40/100G.

Cl **31B** *SC* **31B.4.3** *P* **366** *L* **10** # 890

Ganga, Ilango Intel Corporation

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

This comment is related to changes needed to 31B.4.3 Major Capabilities/Options table in base document due to insertion of new speeds after 100Mb/s. The last row of table currently states *MIIc at operating speeds above 100Mb/s, however actually MIIc is for 1000Mb/s and MIId has been added for 10Gb/s other than 10GBASE-T and MIIe for 10Gb/s for 10GBASE-T. The last two options have been added/corrected by 802.3-2008-Cor1 in 31B.4.6 however these options have not been added to 31B.4.3. Add the missing options to table in 31B.4.3. The fix is needed to be consistent with the new options MIIf and MIIg added for 40Gb/s and 100Gb/s by 802.3ba

SuggestedRemedy

Change 31B.4.3 last row of table as follows:
*MIIc At operating speeds (strikethrough: above 100 Mb/s) of 1000 Mb/s
31B.4.3 Insert the following two rows to the end of table:
{Item} *MIId {Feature} At operating speeds of 10 Gb/s with PHY types other than 10GBASE-T {Subclause} 31B.3.7 {Status} Optional
{Item} *MIIe {Feature} At operating speeds of 10 Gb/s with PHY types of 10GBASE-T {Subclause} 31B.3.7 {Status} Optional

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45** *P* **54** *L* **39** # 216

Turner, Edward J Gnodal Limited

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

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

Turner, Edward J Gnodal Limited

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45** *P* **85** *L* **50** # 217

Turner, Edward J Gnodal Limited

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

No line at the bottom of the table.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2** *P* **37** *L* **10** # 12

Hajduczenia, Marek ZTE Corp.

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

What is a 'Separated PMA' ? I am sure that 802.3ba participants are intimately aware of that but a casual reader not participating in 802.3ba proceedings is at a loss in here. Similar comment to table 45-2, where reference to 'package' is made. What is a package and where it is defined?

SuggestedRemedy

Provide a reference to where these concepts are defined

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add a table footnote to Separated PMA (1)

"Separated PMAs are defined in 45.2.1"

"package" is defined in 45.2.

Cl **45** *SC* **45.2.1** *P* **38** *L* **37** # 390

Law, David 3Com

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

Register 1.12 is called the '10G-EPON PMA/PMD ability register', see IEEE Std 802.3av-2009 subclause 45.2.1.11 (page 20).
During my check of the changes made by this draft to the previous approved standards it became apparent that this register name was not correctly reflected in this table in the changes in IEEE Std 802.3av-2009 (see IEEE Std 802.3av-2009 page 17). If the IEEE P802.3ba project is uncomfortable about making this change I'm happy to submit it as a maintenance request.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

The change will be shown as a change to 802.3-2008 as modified by 802.3av-2009.

Cl **45** *SC* **45.2.1** *P* **38** *L* **43** # 399

Anslow, Peter Nortel Networks

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

Registers 1.150 and 1.151 have been re-named to "BASE-R ..." but the previous name of "10GBASE-KR ..." still appears in Tables 72-2 and 72-3

SuggestedRemedy

Change "10GBASE-KR PMD" to "BASE-R PMD" in Table 72-2 (2 places) and Table 72-3 (4 places)

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This change applies to Clause 72. It is not worth opening the clause for this editorial change.

However, a comment against 802.3az could fix this.

Cl **45** *SC* **45.2.1** *P* **39** *L* **15** # 701

Barrass, Hugh Cisco Systems, Inc.

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

All of the "per-lane" counters are packed in much more tightly that they need to be given the 32,000 registers available. This may lead to painful and unnecessary renumbering in future projects that use more lanes. This comment will be referenced by specific other comments dealing with the particular registers, so it includes the text string HB_01 .

SuggestedRemedy

Change the addresses of per-PCS-lane registers so that they start on 100 boundaries and reserve 200 register addresses for future expansion. Change the addresses of per-physical-lane registers so that they start on 100 bounaries and reserve 100 register addresses for future expansion.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **39** *L* **16** # 702

Barrass, Hugh Cisco Systems, Inc.

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

HB_02 Change register BASE-R FEC corrected blocks counter, lanes 0 through 19 address as proposed in HB_01

SuggestedRemedy

Change register addresses to 1.300 to 1.339, add a row for Reserved 1.340 to 1.699

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **39** *L* **18** # 703

Barrass, Hugh Cisco Systems, Inc.

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

HB_03 Change register BASE-R FEC uncorrected blocks counter, lanes 0 through 19 address as proposed in HB_01

SuggestedRemedy

Change register addresses to 1.700 to 1.739, add a row for Reserved 1.740 to 1.1099

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **39** *L* **19** # 704

Barrass, Hugh Cisco Systems, Inc.

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

Reserved registers need to change according to HB_01

SuggestedRemedy

Change address range to 1.176 to 1.299 (move to the appropriate position)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **39** *L* **21** # 705

Barrass, Hugh Cisco Systems, Inc.

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

HB_04 Change register BASE-R LP coefficient update, lane 0 (copy) address as proposed in HB_01

SuggestedRemedy

Change register address to 1.1100

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **39** *L* **22** # 706

Barrass, Hugh Cisco Systems, Inc.

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

HB_05 Change register BASE-R LP coefficient update, lane 1 through 9 address as proposed in HB_01

SuggestedRemedy

Change register addresses to 1.1101 to 1.1109, add a row for Reserved 1.1110 to 1.1199

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **39** *L* **22** # 400

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change the format of the range as suggested, note that the numbers change accroding to comment #701.

Cl **45** *SC* **45.2.1** *P* **39** *L* **24** # 707

Barrass, Hugh Cisco Systems, Inc.

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

HB_06 Change register BASE-R LP status report, lane 0 (copy) address as proposed in HB_01

SuggestedRemedy

Change register address to 1.1200

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **39** *L* **25** # 708

Barrass, Hugh Cisco Systems, Inc.

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

HB_07 Change register BASE-R LP status report, lane 1 through 9 address as proposed in HB_01

SuggestedRemedy

Change register addresses to 1.1201 to 1.1209, add a row for Reserved 1.1210 to 1.1299

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **39** *L* **26** # 709

Barrass, Hugh Cisco Systems, Inc.

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

HB_08 Change register BASE-R LD coefficient update, lane 0 (copy) address as proposed in HB_01

SuggestedRemedy

Change register address to 1.1300

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **39** *L* **27** # 710

Barrass, Hugh Cisco Systems, Inc.

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

HB_09 Change register BASE-R LD coefficient update, lane 1 through 9 address as proposed in HB_01

SuggestedRemedy

Change register addresses to 1.1301 to 1.1309, add a row for Reserved 1.1310 to 1.1399

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **39** *L* **29** # 711

Barrass, Hugh Cisco Systems, Inc.

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

HB_10 Change register BASE-R LD status report, lane 0 (copy) address as proposed in HB_01

SuggestedRemedy

Change register address to 1.1400

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **39** *L* **30** # 712

Barrass, Hugh Cisco Systems, Inc.

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

HB_11 Change register BASE-R LD status report, lane 1 through 9 address as proposed in HB_01

SuggestedRemedy

Change register addresses to 1.1401 to 1.1409, add a row for Reserved 1.1410 to 1.1499

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **39** *L* **32** # 713

Barrass, Hugh Cisco Systems, Inc.

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

Reserved registers need to change according to HB_01

SuggestedRemedy

Delete reserved row 1.306

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **39** *L* **33** # 714

Barrass, Hugh Cisco Systems, Inc.

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

HB_12 Change register Test pattern ability address as proposed in HB_01

SuggestedRemedy

Change register address to 1.1500

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **39** *L* **34** # 715

Barrass, Hugh Cisco Systems, Inc.

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

HB_13 Change register Square wave testing control address as proposed in HB_01

SuggestedRemedy

Change register address to 1.1501

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **39** *L* **34** # 738

Barrass, Hugh Cisco Systems, Inc.

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

The names of registers 1.308 & 1.309 are reversed

SuggestedRemedy

Change names in table so that 1.308 is Square wave testing control and 1.309 is PRBS pattern testing control

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **39** *L* **35** # 716

Barrass, Hugh Cisco Systems, Inc.

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

HB_14 Change register PRBS pattern testing control address as proposed in HB_01

SuggestedRemedy

Change register address to 1.1502

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **39** *L* **37** # 717

Barrass, Hugh Cisco Systems, Inc.

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

HB_15 Change register PRBS Tx error counters, lane 0 through lane 9 address as proposed in HB_01

SuggestedRemedy

Change register addresses to 1.1600 to 1.1609, add a row for Reserved 1.1610 to 1.1699

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **39** *L* **38** # 718

Barrass, Hugh Cisco Systems, Inc.

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

HB_16 Change register PRBS Rx error counters, lane 0 through lane 9 address as proposed in HB_01

SuggestedRemedy

Change register addresses to 1.1700 to 1.1709

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **39** *L* **40** # 719

Barrass, Hugh Cisco Systems, Inc.

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

Reserved registers need to change according to HB_01

SuggestedRemedy

Change address range to 1.1710 to 1.32767

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.12a** *P* **48** *L* **3** # 389

Law, David 3Com

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

The editing instruction states 'Insert 45.2.1.12a (before 45.2.1.12 as numbered in 802.3-2008, renumbered to 45.2.1.13 by P802.3av/D3.4) for 40G/100G extended abilities'. Subclause 45.2.1.12 in IEEE Std 802.3-2008, renumbered to be 45.2.1.13 in IEEE Std 802.3av-2009, is titled '10P/2B PMA/PMD control register (Register 1.30)'. Hence following this instruction would result in the subclause order as follows:
45.2.1.11 10G-EPON PMA/PMD ability register (Register 1.12)
45.2.1.12 PMA/PMD package identifier (Registers 1.14 and 1.15)
45.2.1.12a 40G/100G PMA/PMD extended ability register (Register 1.13)
45.2.1.13 10P/2B PMA/PMD control register (Register 1.30)
I don't believe that this is correct as it would be normal to have the subclause for Register 1.13 after register 1.11 but before 1.14 and 1.15. Based on this suggest that this new subclause, and its subclauses should be placed after 45.2.1.11 and number under 45.2.1.11a. Also I believe the editing instruction should be extended to cover the subclauses of this new subclause and references to existing standards should use the full designation.

SuggestedRemedy

Suggest that the new subclauses be numbered as follows:
45.2.1.11a 40G/100G PMA/PMD extended ability register (Register 1.13)
45.2.1.11a.1 PMA remote loopback ability (1.13.15)
45.2.1.11a.2 100GBASE-ER4 ability (1.13.11)
45.2.1.11a.3 100GBASE-LR4 ability (1.13.10)
45.2.1.11a.4 100GBASE-SR10 ability (1.13.9)
45.2.1.11a.5 100GBASE-CR10 ability (1.13.8)
45.2.1.11a.6 40GBASE-LR4 ability (1.13.3)
45.2.1.11a.7 40GBASE-SR4 ability (1.13.2)
45.2.1.11a.8 40GBASE-CR4 ability (1.13.1)
45.2.1.11a.9 40GBASE-KR4 ability (1.13.0)
Suggest that the editing instruction should read 'Insert new subclauses 45.2.1.11a and 45.2.1.11a.1 through 45.2.1.11a.9 after existing subclause 45.2.1.11.11 (this subclause was renumbered by IEEE Std 802.3av).'

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.4.1a** *P* **42** *L* **24** # 754

Law, David 3Com

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

It has been agreed with staff that where a subclause is inserted prior to the existing first subclause it is labelled [existing subclause - one level].[a through z]. Where a subclause is inserted after an existing subclause - assuming it is not the last - the new subclause it is labelled [subclause number][a through z].
For example to insert two subclauses before 43.2.1 the subclauses would be numbered 43.2.a and 43.2.b. Two subclauses between 43.2.1 and 43.2.2 would be numbered 43.2.1a and 43.2.1b. Two subclauses added after the last subclause 43.2.2 would be numbered 43.2.3 and 43.2.4.
At the moment I note that IEEE P802.3ba isn't self consistent with itself in respect to inserts before first existing subclause - and I see IEEE P802.3az using a different approach. Here are three examples of inserts before the existing first paragraph where each time a different numbering approach has been used.
[1] IEEE P802.3ba/D3.0 using .1a then .1b
45.2.1.4 PMA/PMD speed ability (Register 1.4)
45.2.1.4.1a 100G capable (1.4.9)
45.2.1.4.1b 40G capable (1.4.8)
45.2.1.4.1 10/1G capable (1.4.7)
[2] IEEE P802.3ba/D3.0 using .1a then .2a
45.2.1.9 PMD receive signal detect register (Register 1.10)
45.2.1.9.1a PMD receive signal detect 9 (1.10.10)
45.2.1.9.2a PMD receive signal detect 4, 5, 6, 7, 8 (1.10.5, 1.10.6, 1.10.7, 1.10.8, 1.10.9)
[3] IEEE P802.3az/D2.2 using .a and .b
79.3 IEEE 802.3 Organizationally Specific TLVs
79.3.a EEE TLV

SuggestedRemedy

Please use the approach agreed with staff in respect to inserts before existing first paragraph.
Change '45.2.1.4.1a 100G capable (1.4.9)' to read '45.2.1.4.a 100G capable (1.4.9)'.
Change '45.2.1.4.1b 40G capable (1.4.8)' to read '45.2.1.4.b 40G capable (1.4.8)'.
Change '45.2.1.8.1a PMD transmit disable 9 (1.9.10)' to read '45.2.1.8.a PMD transmit disable 9 (1.9.10)'.
Change '45.2.1.8.2a PMD transmit disable 4, 5, 6, 7, 8 (1.9.5, 1.9.6, 1.9.7, 1.9.8, 1.9.9)' to read '45.2.1.8.b PMD transmit disable 4, 5, 6, 7, 8 (1.9.5, 1.9.6, 1.9.7, 1.9.8, 1.9.9)'.
Change '45.2.1.9.1a PMD receive signal detect 9 (1.10.10)' to read '45.2.1.9.a PMD receive signal detect 9 (1.10.10)'.
Chnage '45.2.1.9.2a PMD receive signal detect 4, 5, 6, 7, 8 (1.10.5, 1.10.6, 1.10.7, 1.10.8, 1.10.9)' to read '45.2.1.9.b PMD receive signal detect 4, 5, 6, 7, 8 (1.10.5, 1.10.6, 1.10.7, 1.10.8, 1.10.9)'.
Change '45.2.3.15.1a Scrambled idle test-pattern enable (3.42.7)' to read '45.2.3.15.a Scrambled idle test-pattern enable (3.42.7)'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.6.1** *P* **43** *L* **10** # 619

Dambrosia, John Force 10 Networks Inc

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

PIC statements related to implementation of 100GBASE-ER4, 100GBASE-LR4, 100GBASE-SR10, 100GBASE-CR10, 40GBASE-LR4, 40GBASE-SR4, 40GBASE--CR4, and 40GBASE-KR4 PMA / PMD not included

SuggestedRemedy

add corresponding pic statement

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change MM23 to reference bits 5:0 instead of 3:0. Note that this is an error in 802.3av-2009.

Cl **45** *SC* **45.2.1.7.4** *P* **44** *L* **17** # 91

Szczepanek, Andre HSZ Consulting Ltd

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

Although the text in clause 45 for the transmit and receive fault bits has been updated, the text for the global PMA/PMD fault bit (1.1.7) has not been updated to cover 40/100Gbps operation.
45.2.1.2.1 currently says :
Fault is a global PMA/PMD variable. When read as a one, bit 1.1.7 indicates that either (or both) the PMA or the PMD has detected a fault condition on either the transmit or receive paths. When read as a zero, bit 1.1.7 indicates that neither the PMA nor the PMD has detected a fault condition. For 10 Gb/s operation, bit 1.1.7 is set to a one when either of the fault bits (1.8.11, 1.8.10) located in register 1.8 are set to a one. For 10PASS-TS or 2BASE-TL operations, when read as a one, a fault has been detected and more detailed information is conveyed in 45.2.1.16, 45.2.1.39, 45.2.1.40, and 45.2.1.55.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.7.4** *P* **44** *L* **29** # 401

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.77** *P* **50** *L* **6** # 402

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.79** *P* **52** *L* **49** # 725

Barrass, Hugh Cisco Systems, Inc.

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

Change register address according to HB_04

SuggestedRemedy

Change register address to 1.1100

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.79** *P* **52** *L* **50** # 615

Dambrosia, John Force 10 Networks Inc

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

Shall statement does not include corresponding pic statement.

SuggestedRemedy

add corresponding pic statement

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Other locations in Clause 45 that refer to copies of registers do not have "shall" (and therefore do not have a PICS entry). Make this location consistent - delete the word "shall"

Cl **45** *SC* **45.2.1.8** *P* **45** *L* **37** # 9

Hajduczenia, Marek ZTE Corp.

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

The Note says "... and may disrupt the network". What network and disrupt in what way? IMHO "Disabling the transmitter on one or more lanes stops the entire link from carrying data" is sufficient to this end i.e. informing a reader that if a stupid thing is done (i.e. one of the transmitting lanes is dsabled), then the link goes down.

SuggestedRemedy

Strike "and may disrupt the network" from the Note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.8.2a** *P* **46** *L* **28** # 13

Hajduczenia, Marek ZTE Corp.

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

(1) Add "," before "respectively"(2) Add "bit" before "1.9.10"Similar comment against section 45.2.1.9.2a, page 47, line 28

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.80** *P* **53** *L* **17** # 727

Barrass, Hugh Cisco Systems, Inc.

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

Change register address according to HB_06. Note that the register address is currently wrong.

SuggestedRemedy

Change register address to 1.1200

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.80** *P* **53** *L* **17** # 612

Dambrosia, John Force 10 Networks Inc

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

Believe there is a typo causing conflict between register address in Table 45-3 (Register address 1.276) and statement in 45.2.1.80 (A copy of this register may be implemented at address 1.267 to assist PHY access for devices using postread-increment-address access for a multi-lane PCS.)

SuggestedRemedy

Believe that table is correct. Change register address in 45.2.1.80 to 1.276.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.80** *P* **53** *L* **18** # 616

Dambrosia, John Force 10 Networks Inc

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

Shall statement does not include corresponding pic statement.

SuggestedRemedy

add corresponding pic statement

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Other locations in Clause 45 that refer to copies of registers do not have "shall" (and therefore do not have a PICS entry). Make this location consistent - delete the word "shall"

Cl **45** *SC* **45.2.1.81** *P* **53** *L* **37** # 613

Dambrosia, John Force 10 Networks Inc

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

Believe there is a typo causing conflict between register address in Table 45-3 (Register address 1.286) and statement in 45.2.1.81 (A copy of this register may be implemented at address 1.268 to assist PHY access for devices using postread-increment-address access for a multi-lane PCS. If implemented, all accesses to the copy shall have identical behavior as the original register.)

SuggestedRemedy

Believe that table is correct. Change register address in 45.2.1.81 to 1.286.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.81** *P* **53** *L* **37** # 729

Barrass, Hugh Cisco Systems, Inc.

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

Change register address according to HB_08. Note that the register address is currently wrong.

SuggestedRemedy

Change register address to 1.1300

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.81** *P* **53** *L* **38** # 617

Dambrosia, John Force 10 Networks Inc

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

Shall statement does not include corresponding pic statement.

SuggestedRemedy

add corresponding pic statement

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Other locations in Clause 45 that refer to copies of registers do not have "shall" (and therefore do not have a PICS entry). Make this location consistent - delete the word "shall"

Cl **45** *SC* **45.2.1.82** *P* **54** *L* **4** # 614

Dambrosia, John Force 10 Networks Inc

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

Believe there is a typo causing conflict between register address in Table 45-3 (Register address 1.296) and statement in 45.2.1.82 (A copy of this register may be implemented at address 1.269 to assist PHY access for devices using postread-
increment-address access for a multi-lane PCS. If implemented, all accesses to the copy shall have
identical behavior as the original register.)

SuggestedRemedy

Believe that table is correct. Change register address in 45.2.1.82 to 1.296.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.82** *P* **54** *L* **4** # 731

Barrass, Hugh Cisco Systems, Inc.

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

Change register address according to HB_10. Note that the register address is currently wrong.

SuggestedRemedy

Change register address to 1.1400

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.82** *P* **54** *L* **5** # 618

Dambrosia, John Force 10 Networks Inc

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

Shall statement does not include corresponding pic statement.

SuggestedRemedy

add corresponding pic statement

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Other locations in Clause 45 that refer to copies of registers do not have "shall" (and therefore do not have a PICS entry). Make this location consistent - delete the word "shall"

Cl **45** *SC* **45.2.1.82a** *P* **54** *L* **12** # 767

Law, David 3Com

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

The editing instruction for subclause 45.2.1.82a reads 'Insert 45.2.1.82a and 45.2.1.82b for status register 2 & 3:' which doesn't make it totally clear where to place the new subclauses. According to the IEEE Standards Style Guide a letter subclause such as this is placed after the numbered so 45.2.1.82a would appear after 45.2.1.82. However looking at the register numbers it appears that these new subclauses should appear before 45.2.1.82.
45.2.1.81 10GBASE-KR LD status report register (Register 1.155)
45.2.1.82a BASE-R PMD status 2 register (Register 1.156)
45.2.1.82b BASE-R PMD status 3 register (Register 1.157)
45.2.1.82 1000BASE-KX control register (Register 1.160)
45.2.1.83 1000BASE-KX status register (Register 1.161)
I also note that the subclauses of 45.2.1.82b start at .5 as follows which I don't think is correct.
45.2.1.82b BASE-R PMD status 3 register (Register 1.157)
45.2.1.82b.5 Receiver status 8, 9 (1.157.0, 1.157.4)
45.2.1.82b.6 Frame lock 8, 9 (1.157.1, 1.157.5)
45.2.1.82b.7 Start-up protocol status 8, 9 (1.157.2, 1.157.6)
45.2.1.82b.8 Training failure 8, 9 (1.157.3, 1.157.7)

SuggestedRemedy

Suggest the editorial instructions be changed to read 'Insert subclause 45.2.1.81a and 45.2.1.81b after subclause 45.2.1.81:'
Suggest that the subclauses be labelled as follows:
45.2.1.81a BASE-R PMD status 2 register (Register 1.156)
45.2.1.81a.1 Receiver status 4, 5, 6, 7 (1.156.0, 1.156.4, 1.156.8, 1.156.12)
45.2.1.81a.2 Frame lock 4, 5, 6, 7 (1.156.1, 1.156.5, 1.156.9, 1.156.13)
45.2.1.81a.3 Start-up protocol status 4, 5, 6, 7 (1.156.2, 1.156.6, 1.156.10, 1.156.14)
45.2.1.81a.4 Training failure 4, 5, 6, 7 (1.156.3, 1.156.7, 1.156.11, 1.156.15)
45.2.1.81b BASE-R PMD status 3 register (Register 1.157)
45.2.1.81b.1 Receiver status 8, 9 (1.157.0, 1.157.4)
45.2.1.81b.2 Frame lock 8, 9 (1.157.1, 1.157.5)
45.2.1.81b.3 Start-up protocol status 8, 9 (1.157.2, 1.157.6)
45.2.1.81b.4 Training failure 8, 9 (1.157.3, 1.157.7)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.85** *P* **57** *L* **3** # 14

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The changes made to these subclauses for 40/100G do not change the sense of the terms used. The title of Clause 74 should give some clarity to the definition of "BASE-R FEC."

Cl **45** *SC* **45.2.1.85.2** *P* **57** *L* **28** # 403

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.87** *P* **58** *L* **38** # 260

Trowbridge, Stephen ALCATEL-LUCENT

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

"multi-lane PCS" is OK, but "multi-lane PHY" is problematic since future PHYs may not always be multiple physical lanes.

SuggestedRemedy

Either change "multi-lane PHY" to "multi-lane PCS", or change to "multi-PCS lane PHY". Same issue with 41.2.1.88, page 59, line 16.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

As this is a PMA/PMD MMD, it needs to be specified that PCS lanes are intended.

change to "multi-PCS lane PHY"

locations:
p.58, l.38
p.59, l.16; l.27; l.40; l.53
p.60, l.7; l.16; l.25

Cl **45** *SC* **45.2.1.89** *P* **59** *L* **23** # 723

Barrass, Hugh Cisco Systems, Inc.

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

Change register addresses according to HB_02

SuggestedRemedy

Change register addresses to 1.300 to 1.339

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.89** *P* **59** *L* **27** # 261

Trowbridge, Stephen ALCATEL-LUCENT

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

Since FEC is on a PCS lane basis, this text applies even when the PHY itself is serial

SuggestedRemedy

Change "multi-lane BASE-R PHYs" to "multi-PCS lane BASE-R PHYs" and "multi-lane PHYs" to multi-PCS lane PHYs" on the following line. Also sub-clause 45.2.1.90 on lines 40-41 (same page), sub-clause 45.2.1.91 lines 53-54(same page), sub-clause 45.2.1.92 lines 7-8 (p60), sub-caluse 45.2.1.93 lines 16-17 (p60), and sub-clause 45.2.1.94 lines 25-26 (p60).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See also comment #260

Cl **45** *SC* **45.2.1.90** *P* **59** *L* **36** # 724

Barrass, Hugh Cisco Systems, Inc.

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

Change register addresses according to HB_03

SuggestedRemedy

Change register addresses to 1.700 to 1.739

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.91** *P* **59** *L* **47** # 404

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.91** *P* **59** *L* **51** # 726
Barrass, Hugh Cisco Systems, Inc.

Comment Type **T** *Comment Status* **D**
Change register addresses according to HB_05

SuggestedRemedy
Change register addresses to 1.1101 to 1.1109

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

Cl **45** *SC* **45.2.1.92** *P* **60** *L* **5** # 728
Barrass, Hugh Cisco Systems, Inc.

Comment Type **T** *Comment Status* **D**
Change register addresses according to HB_07

SuggestedRemedy
Change register addresses to 1.1201 to 1.1209

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

Cl **45** *SC* **45.2.1.93** *P* **60** *L* **14** # 730
Barrass, Hugh Cisco Systems, Inc.

Comment Type **T** *Comment Status* **D**
Change register addresses according to HB_09

SuggestedRemedy
Change register addresses to 1.1301 to 1.1309

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

Cl **45** *SC* **45.2.1.94** *P* **60** *L* **23** # 732
Barrass, Hugh Cisco Systems, Inc.

Comment Type **T** *Comment Status* **D**
Change register addresses according to HB_11

SuggestedRemedy
Change register addresses to 1.1401 to 1.1409

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

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

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

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

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

Cl **45** *SC* **45.2.1.95** *P* **61** *L* **25** # 92
Szczepanek, Andre HSZ Consulting Ltd

Comment Type **T** *Comment Status* **D**
The definition of the "PRBS9 ability" bit requires that PRBS9 generation capability be provided in both transmit and receive directions even though the PRBS9 pattern is strictly an optical test pattern. (See line 48)
In order for an optical gearbox PMA to support PRBS9 generation to the optics it would be required to also provide PRBS9 on the CAUI

SuggestedRemedy
Change the name of 1.307.5 to "Tx PRBS9 ability" and change the description field to
1 = Transmit direction PRBS9 pattern generation supported
0 = Transmit direction PRBS9 pattern generation not supported
Change the paragraph starting on line 47 to
When read as a one, register 1.307, bit 6 indicates that the device supports PRBS31 generation or checking, and register 1.307. In this case, it shall support that test for all of the generator and checker types that are indicated by the assertion of bits 3:0.
When read as a one, register 1.307, bit 5 indicates that the device supports PRBS9 generation in the transmit direction.

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

The description of the PRBS9 function in Clause 83 allows (optional) implementation in both directions. The control register reflects that.

Cl **45** *SC* **45.2.1.95** *P* **61** *L* **3** # 733

Barrass, Hugh Cisco Systems, Inc.

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

Change register address according to HB_12

SuggestedRemedy

Change register address to 1.1500 (multiple instances)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.96** *P* **62** *L* **47** # 407

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.96** *P* **62** *L* **6** # 94

Szczepanek, Andre HSZ Consulting Ltd

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

The name of this register and its bits is ambiguous as to the direction of the "square wave testing" that is being controlled. This sub-clause could be interpreted as indicating a requirement to support square wave testing in both the receive and transmit directions.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The register name does not need to fully define function of the register - that job is performed in Clause 83.

Change the text of 45.2.1.96 to add clarity - from:

From "The square wave testing control and status register is used for PHY types that implement square wave testing
in the PMA."

To "The square wave testing control and status register is used for PHY types that implement transmit square wave testing
in the PMA."

Cl **45** *SC* **45.2.1.96** *P* **62** *L* **6** # 734

Barrass, Hugh Cisco Systems, Inc.

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

Change register address according to HB_13

SuggestedRemedy

Change register address to 1.1501 (multiple instances, note also reference in 45.2.1.95)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

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

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

The title of Table 45--65b is "Square wave testing control and status" but the register name elsewhere is "square wave testing control"

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.97** *P* **63** *L* **10** # 408
Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.97** *P* **63** *L* **3** # 735
Barrass, Hugh Cisco Systems, Inc.

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

Change register address according to HB_14

SuggestedRemedy

Change register address to 1.1502 (multiple instances, note also reference in 45.2.1.95)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.97** *P* **63** *L* **44** # 409
Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.98** *P* **63** *L* **49** # 736
Barrass, Hugh Cisco Systems, Inc.

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

Change register addresses according to HB_15

SuggestedRemedy

Change register addresses to 1.1600 to 1.1609 (multiple instances)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.99** *P* **64** *L* **20** # 737
Barrass, Hugh Cisco Systems, Inc.

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

Change register addresses according to HB_16

SuggestedRemedy

Change register addresses to 1.1700 to 1.1709 (multiple instances)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3** *P* **65** *L* **44** # 721
Barrass, Hugh Cisco Systems, Inc.

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

Reserved registers need to change according to HB_01

SuggestedRemedy

Change address range to 3.83 to 3.199

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3** *P* **65** *L* **45** # 720

Barrass, Hugh Cisco Systems, Inc.

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

HB_17 Change register BIP error counters, lanes 0 through 19 address as proposed in HB_01

SuggestedRemedy

Change register addresses to 3.200 to 3.219

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3** *P* **65** *L* **46** # 749

Barrass, Hugh Cisco Systems, Inc.

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

HB_18 It would be useful to include a set of PCS mapping registers for debug purposes. In order to make this simple to define and extend in the future, there should be a register for each PCS lane that contains the PMA service interface lane number after the lane is aligned.

SuggestedRemedy

A row with registers: PCS lane mapping registers, lanes 0 through 19; addresses 3.400 to 3.419. Also add a reserved row between 3.220 and 3.399; the last reserved row needs to change to 3.420 to 3.32767. This amends the resolution of HB_17.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3** *P* **65** *L* **46** # 722

Barrass, Hugh Cisco Systems, Inc.

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

Reserved registers need to change according to HB_01

SuggestedRemedy

Change address range to 3.220 to 3.32768

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.11** *P* **68** *L* **34** # 412

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.11.5** *P* **69** *L* **42** # 267

Trowbridge, Stephen ALCATEL-LUCENT

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

No change is required in Clause 45 as it uses "receive lane" and references the appropriate section in Clause 82.

A mapping register is added by comments #749 & #750.

Cl **45** *SC* **45.2.3.12.3** *P* **71** *L* **1** # 16

Hajduczenia, Marek ZTE Corp.

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

Space missing in "BER(3.33.13:8)"

SuggestedRemedy

Add space between BER and the opening brace

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.15** *P* **71** *L* **24** # 413

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.15** *P* **71** *L* **27** # 17

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Delete "either" and "or may function as defined"

Underline "and 82.2.10"

Cl **45** *SC* **45.2.3.15.1a** *P* **71** *L* **29** # 414

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

Change the editing instruction to "Insert 45.2.3.15.1a before 45.2.3.15.1:"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.16** *P* **72** *L* **1** # 18

Hajduczenia, Marek ZTE Corp.

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

In Table 45-95, items 3.42.6, 3.42.5 and 3.42.4 should have their Description corrected to read as follows:1 = Enable 10GBASE-R PRBS9 test-pattern mode on the transmit path0 = Disable 10GBASE-R PRBS9 test-pattern mode on the transmit path1 = Enable 10GBASE-R PRBS31 test-pattern mode on the receive path0 = Disable 10GBASE-R PRBS31 test-pattern mode on the receive path1 = Enable 10GBASE-R PRBS31 test-pattern mode on the transmit path0 = Disable 10GBASE-R PRBS31 test-pattern mode on the transmit pathif you already make a case to add the "10GBASE-R " in the Name of the register.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The "10GBASE-R" is in the register bit name and is therefore redundant in the description. Furthermore, it would make the description too long to be neatly fitted in the table.

Cl **45** *SC* **45.2.3.16a** *P* **72** *L* **42** # 824

Law, David 3Com

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

I believe that the IEEE Standards style guide states that a subclause that is inserted between existing subclauses should be labelled as [lower numbered subclause][a-z] for example to insert two subclauses between 43.2.1 and 43.2.2 the new subclauses would be numbered 43.2.1a and 43.2.1b and not 43.2.2a and 43.2.2b.
New subclauses 45.2.3.16a and 45.2.3.16b are proceeded with the editing instructions 'Insert after 45.2.3.16 for high order counters' which meets the IEEE Standards style guide.
New subclauses 45.2.3.17a however are preceded with the editing instructions 'Insert before 45.2.3.17 for PCS alignment status:' which seems contrary to the IEEE Standards style guide.
This results in:
45.2.3.16 BASE-R PCS test-pattern error counter register (Register 3.43)
45.2.3.16a BER high order counter (Register 3.44)
45.2.3.16b Errored blocks high order counter (Register 3.45)
45.2.3.17a Multi-lane BASE-R PCS alignment status 1 register (Register 3.50)
45.2.3.17b Multi-lane BASE-R PCS alignment status 2 register (Register 3.51)
45.2.3.17c Multi-lane BASE-R PCS alignment status 3 register (Register 3.52)
45.2.3.17d Multi-lane BASE-R PCS alignment status 4 register (Register 3.53)
45.2.3.17 10P/2B capability register (3.60)
45.2.3.18 10P/2B PCS control register (Register 3.61)
I believe to meet the IEEE Standards style guide this should actually be:
45.2.3.16 BASE-R PCS test-pattern error counter register (Register 3.43)
45.2.3.16a BER high order counter (Register 3.44)
45.2.3.16b Errored blocks high order counter (Register 3.45)
45.2.3.16c Multi-lane BASE-R PCS alignment status 1 register (Register 3.50)
45.2.3.16d Multi-lane BASE-R PCS alignment status 2 register (Register 3.51)
45.2.3.16e Multi-lane BASE-R PCS alignment status 3 register (Register 3.52)
45.2.3.16f Multi-lane BASE-R PCS alignment status 4 register (Register 3.53)
45.2.3.17 10P/2B capability register (3.60)
45.2.3.18 10P/2B PCS control register (Register 3.61)

SuggestedRemedy

Change '45.2.3.17a Multi-lane BASE-R PCS alignment status 1 register (Register 3.50)' to read '45.2.3.16c Multi-lane BASE-R PCS alignment status 1 register (Register 3.50)'.
Change subclauses '45.2.3.17a.1' through '45.2.3.17a.9' to read '45.2.3.16c.1' through '45.2.3.16c.9'
Change '45.2.3.17b Multi-lane BASE-R PCS alignment status 2 register (Register 3.51)' to read '45.2.3.16d Multi-lane BASE-R PCS alignment status 2 register (Register 3.51)'.
Change subclauses '45.2.3.17b.1' through '45.2.3.17b.12' to read '45.2.3.16d.1' through '45.2.3.16d.12'.
Change '45.2.3.17c Multi-lane BASE-R PCS alignment status 3 register (Register 3.52)' to read '45.2.3.16e Multi-lane BASE-R PCS alignment status 3 register (Register 3.52)'.
Change subclauses '45.2.3.17c.1' through '45.2.3.17c.8' to read '45.2.3.16e.1' through '45.2.3.16e.8'
Change '45.2.3.17d Multi-lane BASE-R PCS alignment status 4 register (Register 3.53)' to read '45.2.3.16f Multi-lane BASE-R PCS alignment status 4 register (Register 3.53)'.
Change subclause '45.2.3.17d.1' through '45.2.3.17d.12' to read '45.2.3.16f.1' through '45.2.3.16f.12'
Change the editing instructions that precede subclause 45.2.3.16a that reads 'Insert after 45.2.3.16 for high order counters' to read 'Insert subclauses 45.2.3.16a, 45.2.3.16b, 45.2.3.16c and 45.2.3.16d, with their subclauses, after subclause 45.2.3.16:'.
after 45.2.3.16 for high order counters'.
Delete the editing instruction that currently precedes subclause 45.2.3.17a reads 'Insert before 45.2.3.17 for PCS alignment status:'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.16a** *P* **72** *L* **53** # 415

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

Change "Bits 19:6 of BER counter" to "Bits 21:6 of BER counter"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.16a** *P* **73** *L* **5** # 107

Marris, Arthur Cadence Design Syste

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #415 - counter is 22 bits.

Change to 21:6, make appropriate changes in 82.2.18.4.

Cl **45** *SC* **45.2.3.37** *P* **82** *L* **1** # 416

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.37** *P* **82** *L* **3** # 739

Barrass, Hugh Cisco Systems, Inc.

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

Change register address according to HB_17

SuggestedRemedy

Change register address to 3.200 (multiple instances)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.37** *P* **82** *L* **5** # 19

Hajduczenia, Marek ZTE Corp.

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

Table 45-111a cust the text into two parts. Please place the table anchor in the correct location.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.37** *P* **82** *L* **8** # 825

Law, David 3Com

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

The table title 'BIP error counter, lanes 0 and 1 register bit definitions' appears to be in error as the table only shows the lane 0 register bit definition.

SuggestedRemedy

Suggest the table title should read 'BIP error counter, lanes 0 register bit definitions'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.37** *P* **82** *L* **8** # 417

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.38** *P* **82** *L* **21** # 20

Hajduczenia, Marek ZTE Corp.

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

(1) Title for section 45.2.3.38 should read "... Registers 3.91 through 3.109" and not "... (Registers 3.91 through 109)". Avoid any problems with clarity if possible. (2) In line 25, extend teh text to read "lane 2 is shown in register 3.92; through register 3.109 for lane 19."

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to "(Registers 3.91 through 3.109)"

Change to "Lane 1 is shown in register 3.91; lane 2 is shown in register 3.92; through register 3.109 for lane 19."

Note that register numbers change according to comments #720 & #739.

Cl **45** *SC* **45.2.3.38** *P* **82** *L* **21** # 740

Barrass, Hugh Cisco Systems, Inc.

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

Change register addresses according to HB_17

SuggestedRemedy

Change register addresses to 3.201 to 1.219 (multiple instances)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.39** *P* **82** *L* **27** # 750

Barrass, Hugh Cisco Systems, Inc.

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

In accordance with comment HB_18, subclauses are required to define the PCS lane mapping registers.

SuggestedRemedy

Add subclause 45.2.3.39 - PCS lane mapping register, lane 0 (Register 3.400) - The assignment of bits in the PCS lane mapping register, lane 0 is shown in Table 114b. When the multi-lane PCS described in Clause 82 detects and locks the alignment smarker for PCS lane 0, the corresponding PMA service interface lane number is recorded in this register. The contents of the PCS lane mapping register, lane 0 is valid when the Lane 0 aligned bit (3.52.0) is set to one and is invalid otherwise. - the table has one entry: bits 3.400.5:0; name PCS mapping, lane 0; description PMS service interface lane number that maps to PCS lane 0. Other bits reserved.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.4.4** *P* **67** *L* **10** # 410

Anslow, Peter Nortel Networks

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

Refers to bit 1.4.3 which should be bit 3.4.3 in two places.

SuggestedRemedy

Change "bit 1.4.3" to "bit 3.4.3" in two places.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.4.4** *P* **67** *L* **10** # 15

Hajduczenia, Marek ZTE Corp.

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

Incorrect register number. Is "1.4.3", should be "3.4.3" in line 10 and 11.

SuggestedRemedy

Please correct accordingly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.40** *P* **82** *L* **28** # 751

Barrass, Hugh Cisco Systems, Inc.

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

In accordance with comment HB_18, subclauses are required to define the PCS lane mapping registers.

SuggestedRemedy

Add subclause 45.2.3.40 - PCS lane mapping registers, lanes 1 through 19 (Register 3.401 through 3.419) - The definition of PCS lane mapping registers, lanes 1 through 19 is identical to that described for lane 0 in 45.2.3.39. The PCS lane mapping for lane 1 is in register 3.401; lane 2 is in register 3.402; etc.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.6.1** *P* **67** *L* **38** # 411

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.7** *P* **83** *L* **3** # 21

Hajduczenia, Marek ZTE Corp.

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

P802.3av did not touch the AN, so there was no renumbering happeing in register 7.48 within 10G-EPON project. Correct the editorial note

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

P802.3av renumbered almost every table in Clause 45.

Cl **45** *SC* **45.2.7.12** *P* **83** *L* **42** # 418

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

Show "or CX4" and "/CX4" in underline font

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.5.3.2** *P* **85** *L* **15** # 419

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

Show the reference in *ALB to 45.2.1.1.4 black and make it a link. Make the reference for *LLB 45.2.1.1.4a black and make it a link. (Would this be better as "*RLB"?)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change as suggested.

Also change LLB to RLB in this and 4 other instances.

Cl **45** *SC* **45.5.3.2** *P* **86** *L* **13** # 420

Anslow, Peter Nortel Networks

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

In item *FEC-R, "Implementation of 10GBASE-R FEC" should be "Implementation of BASE-R FEC"

SuggestedRemedy

Change "Implementation of 10GBASE-R FEC" to "Implementation of BASE-R FEC"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Strikethrough "10G"

Cl **45** *SC* **45.5.3.2** *P* **86** *L* **28** # 421

Anslow, Peter Nortel Networks

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

The PICS has entries for MMD 8 through 10. What about MMD 11?

SuggestedRemedy

Add a PICS entry for MMD 11

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.5.3.3** *P* **87** *L* **16** # 423

Anslow, Peter Nortel Networks

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

In MM23 the PMA/PMD type is selected using bits 5:0 not 4:0

SuggestedRemedy

Change "PMA/PMD type is selected using bits 4:0" to "PMA/PMD type is selected using bits 5:0"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.5.3.3** *P* **87** *L* **22** # 424

Anslow, Peter Nortel Networks

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

In MM32 "ignores writes to bits 1 -- 10" should be "ignores writes to bits 10:1" to use the same format as other rows and also to conform to the style manual. See 14.2 e) "Dashes should never be used because they can be misconstrued for subtraction signs."

SuggestedRemedy

Change "to bits 1 -- 10" to "to bits 10:1"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Note that base text is "1 - 4"

Cl **45** *SC* **45.5.3.3** *P* **87** *L* **3** # 422

Anslow, Peter Nortel Networks

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

The subclause for MM19a through MM19d should be 45.2.1.1.4a and it is bit 1 not 0.

SuggestedRemedy

Change the subclause to 45.2.1.1.4a for MM19a through MM19d. Also change MM19a from "when bit 0 is set to a one" to "when bit 1 is set to a one" and change MM19b from "PMA transmit data is returned on receive path when in remote loopback" to "PMA receive data is returned on transmit path when in remote loopback"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.5.3.7** *P* **90** *L* **10** # 426

Anslow, Peter Nortel Networks

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

The name of the "BASE-R PCS and 10GBASE-T PCS status" registers is wrong in 3 places

SuggestedRemedy

In RM36, RM37 and RM38 correct the name of the register to be "BASE-R PCS and 10GBASE-T PCS status" 1 or 2 registers. (3 places)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to "BASE-R and 10GBASE-T PCS"

Cl **45** *SC* **45.5.3.7** *P* **90** *L* **31** # 427

Anslow, Peter Nortel Networks

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

RM42 says "BER counter holds at all ones at overflow" but this is only true if the BER high order counter, 3.44 (see 45.2.3.16a) is not implemented. Also applies to RM43

SuggestedRemedy

Change "XCR:M" to "CR:M". Make the same change to RM43 for the Errored Blocks counter.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Because the BER and errored blocks high order counters are optional, this will become !RM50a:M and !RM50f:M respectively.

Cl **45** *SC* **45.5.3.7** *P* **90** *L* **44** # 428

Anslow, Peter Nortel Networks

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

RM50a is shown as XCR:O but implementing the BER high order counter is mandatory for 40/100G (45.2.3.16a)

SuggestedRemedy

Change *XCR on Page 89, line 20 to be "Implementation of 40/100GBASE-R PCS" only.
Remove "10CR:M"
Call out both CR: and XCR: where currently we have XCR:
In RM50a and RM50f make the Status CR:O XCR:M

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

For RM50a and RM50f, change to CR:O, 40CR:M, 100CR:M

Cl **45** *SC* **45.5.3.7** *P* **90** *L* **46** # 429

Anslow, Peter Nortel Networks

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

RM50b says "Register bit 3.44.15 set to 1" but bit 3.44.15 is part of the counter according to Table 45-96a

SuggestedRemedy

Remove RM50b

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.5.3.7** *P* **90** *L* **9** # 425

Anslow, Peter Nortel Networks

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

In the base document RM35 is "Writes to 10GBASE-R PCS status 1 register have no effect" but this register has been re-named to "BASE-R and 10GBASE-T PCS status 1" register

SuggestedRemedy

Include a row for RM35 with the correct register name.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.5.3.7** *P* **91** *L* **26** # 262

Trowbridge, Stephen ALCATEL-LUCENT

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

Multi-lane refers to PCS lanes and not physical lanes

SuggestedRemedy

Change "Non Multi-lane BASE-R device" to "Non multi-PCS lane BASE-R device". Same issue lines 34, 42 same page

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.5.3.7** *P* **91** *L* **3** # 430

Anslow, Peter Nortel Networks

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

RM50f through RM50j concern the Errored blocks high order counter, so the subclause should be 45.2.3.16b rather than 45.2.3.16a

SuggestedRemedy

Change the subclause for RM50f through RM50j to 45.2.3.16b

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.5.3.7** *P* **91** *L* **47** # 431

Anslow, Peter Nortel Networks

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

RM52l says "Counters reset on read to 3.80 through 3.89 or PCS reset" but the BIP error counters are 3.90 through 3.109

SuggestedRemedy

Change "read to 3.80 through 3.89 or" to "read to 3.90 through 3.109 or" also, the lower case "L" is difficult to distinguish from the number "1" so consider changing from "RM52l" (miss out this letter).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change as suggested.

Change reference to "RM52m"

Cl **45** *SC* **Table 45-3** *P* **39** *L* **16** # 108

Marris, Arthur Cadence Design Syste

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This is remedied by comment #701

Cl **45** *SC* **Table 45-3** *P* **39** *L* **35** # 93

Szczepanek, Andre HSZ Consulting Ltd

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #738

Cl **69** *SC* **69.1.2** *P* **95** *L* **24** # 22

Hajduczenia, Marek ZTE Corp.

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

Bullet item iii - should read "a single-lane 10 Gb/s PHY"

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

'a' needs to be underlined as it is modifying base text.

Cl **69** *SC* **69.2.5** *P* **97** *L* **49** # 23

Hajduczenia, Marek ZTE Corp.

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

The word "existing" was removed, though I suggest to reinstate it. It makes sense in this context to emphasize the fact that minimum effort is needed to modify the existing network management solutions into the new system.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **73** *SC* **73** *P* **99** *L* **1** # 432

Anslow, Peter Nortel Networks

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

The clause title is different from the base standard, but this is not shown.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **73** *SC* **73.11** *P* **106** *L* **2** # 437

Anslow, Peter Nortel Networks

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

The title of this clause has changed but this is not shown.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **73** *SC* **73.3** *P* **99** *L* **53** # 433

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

Show "10GBASE-KR" in normal font

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **73** *SC* **73.5.1** *P* **100** *L* **32** # 434

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **73** *SC* **73.6.4** *P* **101** *L* **23** # 436

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **73** *SC* **73.6.4** *P* **101** *L* **7** # 435

Anslow, Peter Nortel Networks

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

The change instruction says Table 73-4 but the table heading is 73-2

SuggestedRemedy

Change the title of the table to be 73-4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **74** *SC* **74.1** *P* **107** *L* **15** # 24

Hajduczenia, Marek ZTE Corp.

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

The text says "provides additional margin to account for" but it is not clear what "margin" is meant. P802.3ba could do service to humanity and clarify what margin is meant.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This is original text which P802.3ba has no need to change. Also the commenter has not provided a detailed remedy.

Cl **74** *SC* **74.11** *P* **124** *L* **2** # 443

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **74** *SC* **74.11.1** *P* **124** *L* **20** # 444

Anslow, Peter Nortel Networks

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

The references in the subclause and value/comment columns should either be links or in dark blue.

SuggestedRemedy

Change the references for 74.8.2, 74.8.3, 74.8.3.1 in to links and make 74.8.4, 51, 74.7.4.1 dark blue

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **74** *SC* **74.11.5** *P* **124** *L* **37** # 896

Ganga, Ilango Intel Corporation

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

PICS FE3 for Reverse gear box function needs to be updated to include option for 40Gb/s and 100Gb/s. The current option is for physical instantiation with XSBI option

SuggestedRemedy

Insert new PICS FE3a for 40Gb/s and 100Gb/s options

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **74** *SC* **74.2** *P* **107** *L* **34** # 25

Hajduczenia, Marek ZTE Corp.

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

The target BER in point f) is really the post-FEC BER. Why not call it out this way i.e. change point f) to read "To support a post-FEC BER objective of 10-12 or better."

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **74** *SC* **74.4** *P* **108** *L* **46** # 26

Hajduczenia, Marek ZTE Corp.

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

(1) Editorial change: add "," after "For 40GBASE-R and 100GBASE-R"(2) Technical change: strike out "which is "(3) General editorial comment: some of the links to 802.3ba clauses are not live e.g. in this text block, neither 80.3 nor 83.2 are livem even though they are added by P802.3ba. Scrub the draft and make internal project links live.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Implement:
(1) Editorial change: add "," after "For 40GBASE-R and 100GBASE-R"
(2) Technical change: strike out "which is "

The 80.3 and 83.2 cross references are implemented correctly in draft 3.0 and so do not need correction.

Cl **74** *SC* **74.4.3** *P* **110** *L* **44** # 27

Hajduczenia, Marek ZTE Corp.

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

In Figure 74-2b, instead of showing FEC encoder instances 0,1,2,3,..., show instances 0,1,2,...,19, which will show that the number is bounded to 20 rather than open. I do not have access to frame sources to make necessary changes and produce an editable FM file. Sorry

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **74** *SC* **74.5** *P* **111** *L* **1** # 28

Hajduczenia, Marek ZTE Corp.

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

It is not clear what changes to section 74.5 are made in P802.3ba and how the original text is affected. Why there is no differential version available? Why do you need to replace the whole existign section instead of adding only 74.5.2, which is new and specific to 40G and 100G?The current description impedes readability a lot.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

It needs to be done this way because the service interface for 10G is different from the service interface for 40 and 100G.

The 10G service interface definition is unchanged from 802.3-2008 with the exception of the introduction and the paragraph numbers.

Cl **74** *SC* **74.5** *P* **111** *L* **12** # 29

Hajduczenia, Marek ZTE Corp.

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

The text says "The service primitives are defined slightly differently for ..." - how much is SLIGHTLY? Less than much and more than little? Avoid such meaningless adjectives. The definitions are different. Full stop.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

delete the word 'slightly'

Cl **74** *SC* **74.5.1** *P* **111** *L* **29** # 438

Anslow, Peter Nortel Networks

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

Clause 49 is not in the draft so it should be shown blue

SuggestedRemedy

Make the reference to clause 49 dark blue

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **74** *SC* **74.5.1.1.2** *P* **111** *L* **50** # 439

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **74** *SC* **74.5.2** *P* **113** *L* **14** # 30

Hajduczenia, Marek ZTE Corp.

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

The text from line 14 onwards should be divided into customary blocks describing the service primitives i.e. -Name-Semantics of the service primitive-When generated-Effect of receiptThe existing description is confusing and unnecessarily obfuscated.

SuggestedRemedy

Follow the existing standard descriptions and not invent a new style.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The service interface is described in detail in 80.3 and this is mentioned in 74.5.2. The way the service interface is described in 74.5.2 is consistent with other service interface descriptions in the 802.3ba draft.

Cl **74** *SC* **74.5.2** *P* **113** *L* **17** # 891

Ganga, Ilango Intel Corporation

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

For better clarity Change "one per lane" to one per PCS lane" to be consistent with description in other places

SuggestedRemedy

Change "one per lane" to one per PCS lane"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **74** *SC* **74.5.2** *P* **113** *L* **20** # 31

Hajduczenia, Marek ZTE Corp.

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

Based on Figure 74-2a and 74-2b, I fail to see how the signal FEC:IS_SIGNAL.indication can be sent to PMA. It is sent to PCS only (arrow points up, not down). PMA can send PMA:IS_SIGNAL.indication towards the FEC sublayer. Clarify whether Figures are OK or the textual description in section 74.5.2 is OK. Based on the description, it makes little sense to have such signal sent to PMA, since PMA is under FEC and not over it.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The FEC service interface can connect to either the PCS or PMA. This is described in Clause 83 and illustrated in Figures 83-1 and 83-2.

Add the following to the end of the first paragraph in 74.4:
"In 40GBASE-R and 100GBASE-R the FEC service interface can either connect to the PCS as illustrated in Figure 74-1 or the PMA as illustrated Figure 83-2. This would be necessary if the FEC and PCS were in separate devices connected by XLAUI/CAUI."

Cl **74** *SC* **74.6** *P* **113** *L* **49** # 892

Ganga, Ilango Intel Corporation

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

Make the description of delay constraints for 40Gb/s, 100Gb/s consistent with definition in other 40/100G clauses (for e.g. see 82.5). Also add reference to definition in 80.4.

SuggestedRemedy

Change sentence to read as follows: "The maximum delay contributed by the 40GBASE-R FEC (sum of transmit and receive delays at one end of the link) shall be no more than 24576 BT (or 48 pause quanta or 614.4 ns)". Change sentence to read as follows: "The maximum delay contributed by the 100GBASE-R FEC (sum of transmit and receive delays at one end of the link) shall be no more than 122880 BT (or 240 pause quanta or 1228.8 ns). Also add the following sentence to end of this subclause: A description of overall system delay constraints and the definitions for bit-times and pause_quanta can be found in 80.4 and its references. Make similar change to 10Gb/s as well to be consistent with the 40 and 100G text. Also the first paragraph of 74.6 could be deleted.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

As per suggested remedy but not deleting the first paragraph of 74.6.

Cl **74** *SC* **74.7.3** *P* **114** *L* **21** # 32

Hajduczenia, Marek ZTE Corp.

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

Ads a reference to clause in 802.3-2008 describing the 64B/66B encoding instead of writing this from start.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This is base text and should not be modified by 802.3ba without good reason.

The description of the sync bits is important in this context because it is these that are compressed to accommodate the FEC overhead.

Cl **74** *SC* **74.7.3** *P* **114** *L* **29** # 440

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **74** *SC* **74.7.4.1.2** *P* **115** *L* **13** # 893

Ganga, Ilango Intel Corporation

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

The Reverse gear box function is applicable to both PCS to FEC interface and the PMA to FEC interface when FEC is implemented in a PHY chip, so update the description accordingly.

SuggestedRemedy

Change sentence to read as follows: "...and the 1-bit wide lane
of the 40GBASE-R or 100GBASE-R PCS to FEC interface (or PMA to FEC interface)". Also change the next sentence as follows: "It receives the 1-bit stream from the FEC service
interface (or PMA service interface) and..." In addition insert the following to the end of sentence in line 18: (or PMA:IS_UNITDATA_i.request primitive). Alternative to the above suggested remedy suitable description could be added to the last paragraph of 74.7.4.1.2 as follows: Insert a sentence to last paragraph: The Reverse gear box function is also applicable to PMA service interface when FEC sublayer is implemented with physical instantiation of PMA service interface for connecting to PCS sublayer (see Annex 83A).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Implement the first of the two suggested remedies.

Cl **74** *SC* **74.7.4.5** *P* **118** *L* **1** # 33

Hajduczenia, Marek ZTE Corp.

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

Change text "The FEC sublayers for 40GBASE-R and 100GBASE-R mark all thirty-two 64B/66B blocks' sync bits to 11 to indicate error to the PCS." to read "The FEC sublayers for 40GBASE-R and 100GBASE-R set sync bits in all thirty-two 64B/66B blocks to 11 to indicate error to the PCS."

SuggestedRemedy

Such a description is clearer IMHO.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to:

"The FEC sublayers for 40GBASE-R and 100GBASE-R set both sync bits to the value 11 in all thirty-two 64B/66B blocks to indicate error to the PCS."

This wording is consistent with the text in the previous paragraph.

Cl **74** *SC* **74.7.4.5.1** *P* **119** *L* **6** # 894

Ganga, Ilango Intel Corporation

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

Change "10GBASE-KR PHY" to "10GBASE-R PHY" to be consitent with definition in base text

SuggestedRemedy

Change "10GBASE-KR PHY" to "10GBASE-R PHY"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

see also comment 34

Cl **74** *SC* **74.7.4.5.1** *P* **119** *L* **6** # 34

Hajduczenia, Marek ZTE Corp.

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

Change text added in lines 6 and 7 to read as follows"... for the 10BASE-KR PHY. For the 40GBASE-R and 100GBASE-R PHYs, sync bits in all thirty-two 64B/66B decoded 64B/66B blocks take a value of {SH.0,SH.1} = 11."

SuggestedRemedy

Per comment. Text is unclear otherwise.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Implement suggested remedy and also change 10BASE-KR to 10GBASE-R (see comment 894)

Cl **74** *SC* **74.8** *P* **121** *L* **25** # 741

Barrass, Hugh Cisco Systems, Inc.

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

Change register addresses according to HB_02

SuggestedRemedy

Change register addresses to 1.300 to 1.339. Also in 74.8.4.1, p.122

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The register addresses will be changed to match any relevant register address changes made in Clause 45.

Cl **74** *SC* **74.8** *P* **121** *L* **26** # 442

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

also see comment 895

Cl **74** *SC* **74.8** *P* **121** *L* **26** # 895

Ganga, Ilango Intel Corporation

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

Change i to italics for variables FEC_corrected_blocks_counter_i and FEC_uncorrected_blocks_counter_i. Make this change to all instances of this variable including 74.8.4.1 & 74.8.4.2 and if applicable to corresponding sections in Clause 45. Also state that i-0 through 3 for 40Gb/s and i=0 to 19 for 100Gb/s to description in 74.8.4.1 and 74.8.4.3

SuggestedRemedy

As per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

also see comment 442

Cl **74** *SC* **74.8** *P* **121** *L* **28** # 742

Barrass, Hugh Cisco Systems, Inc.

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

Change register addresses according to HB_03

SuggestedRemedy

Change register addresses to 1.700 to 1.739. Also in 74.8.4.2, p.123

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The register addresses will be changed to match any relevant register address changes made in Clause 45.

Cl **74** *SC* **74.8** *P* **121** *L* **6** # 441

Anslow, Peter Nortel Networks

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

The change instruction says Table 74-2 but the table heading is 74-1

SuggestedRemedy

Change the title of the table to be 74-2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **74** *SC* **74.8.4.1** *P* **122** *L* **44** # 263

Trowbridge, Stephen ALCATEL-LUCENT

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

While -KR and -CR PHYs may not be serial for a long time, the applicability of FEC is to PHYs with multiple PCS lanes, even if they eventually do not have multiple physical lanes.

SuggestedRemedy

Change "multi-lane PHYs" to "multi-PCS lane PHYs"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **74** *SC* **74.8.4.1** *P* **122** *L* **48** # 35

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The word 'and' on line 48 does not imply simultaneous availability. It is a conjunction used to join the two sets of registers mentioned in the sentence.

Cl **80** *SC* **80** *P* **125** *L* **1** # 358

Kolesar, Paul CommScope Solutions

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The reach objective for SR4/SR10 is 100m.

Aso see response to comment #349

Cl **80** *SC* **80.1.1** *P* **125** *L* **9** # 85

Gustlin, Mark Cisco Systems, Inc.

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

"Physical Layer entities such as those specified in Table 80-2"
Should refer to Table 80-1 instead of 80-2.

SuggestedRemedy

Change to 80-1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **80** *SC* **80.1.2** *P* **125** *L* **30** # 1

Karocki, Piotr TBD Polska

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

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

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This is the reach objective for 100GBASE-LR4 and 100GBASE-ER4 PMDs. (See P802.3ba objectives).

Cl **80** *SC* **80.1.3** *P* **125** *L* **26** # 36

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The same MAC defined in Clause 4 is used by 40G and 100Gb/s physical layer devices. The MAC is used in Full duplex mode of operation when coupled with 40G/100G PHYs. Implementers can also refer to Annex 4A which is simplified version based on Clause 4 for full duplex operation.

The MAC is referred to as "IEEE 802.3 (CSMA/CD) MAC" throughout the base standard even when the MAC is used in full duplex operation (for example see 44.1.3).

Cl **80** *SC* **80.1.4** *P* **127** *L* **28** # 37

Hajduczenia, Marek ZTE Corp.

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

Section 1.4 defines what a PCS lane is. What is a WDM lane?

SuggestedRemedy

Please provide definition, reference to where it might be defined or remove / replace with some other term which is already defined.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Abbreviation for WDM (wavelength division multiplexing) is included in amendment 802.3av and the term "WWDM lane" is used in the base standard without further definition.

Add definition of "WDM lane" to 1.4 Definitions.
1.4.x WDM lane(s): WDM lanes refer to a set of optical lanes used to transfer encoded data over an optical fiber using wavelength division multiplexing.

Cl **80** *SC* **80.1.5** *P* **128** *L* **2** # 38

Hajduczenia, Marek ZTE Corp.

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

...must meet... - so it is a recommendation or a mandatory statement? Must statement will have to be replaced at some time with shall or something else.

SuggestedRemedy

Decide whether it is a requirement (then put shall) or not (then replace "must meet" with "meets")

Proposed Response *Response Status* **W**

PROPOSED REJECT.

In this case the word "must" is used to alert the reader to refer to the actual requirements specified in corresponding clauses.

The word "must" can be used in unavoidable situations. There are several instances in base standard where the word "must" has been used

Cl **80** *SC* **80.1.5** *P* **128** *L* **33** # 284

Dawe, Piers J G Independant

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #900

Cl **80** *SC* **80.1.5** *P* **128** *L* **5** # 39

Hajduczenia, Marek ZTE Corp.

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

In Table 80-2, note a) says that "Annex 83B is optional for PMD types listed in Table 80-2 except for KR and CR PMD types.", yet KR and CR types are also marked as Optional for Annex 83A/B support. Why is that so?

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The column lists both 83A and 83B and hence the note explains that Annex 83B is optional for PMDs other than KR and CR PMDs whereas 83A is optional for all PMD types listed in Table 80-2.

Cl **80** *SC* **80.2.1** *P* **128** *L* **38** # 40

Hajduczenia, Marek ZTE Corp.

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

Several comments(1) title should read "Reconciliation Sublayer (RS) and Media Independent Interface (MII)"(2) Line 40 should read "The Media Independent Interface (MII, see Clause 81) ... "(3) Line 41/42 should read "The MII is not intended to be physically instantiated, rather it can logically connect layers within a device." - MII is not mandatory for implementaion, yet it is intended for physical implementation if such a choice is made and such an interface is needed. I think this sentence should be removed altogether. (4) line 45 should read "The Reconciliation Sublayer (RS) provides a mapping ..."(5) Line 48 should read "While XLGMII and CGMII are optional interfaces, they are used extensively(6) there are numeruous references in this clause which are not live.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The abreviation MII is already used to Media Independent Interface for 100 Mb/s physical layers. Hence it was decided not to use that abbreviation in P802.3ba to generically refer to XLGMII and CGMII. The abbreviations XLGMII and CGMII are used to specifically refer to Media Independent Interface for 40Gb/s and 100Gb/s.

Change line 45 to read as "The Reconciliation Sublayer (RS)..."

Change line 48 to read as: "While XLGMII and CGMII are optional interfaces, they are used extensively.

Check and update hyperlinks to references if they are not live.

Cl **80** *SC* **80.2.2** *P* **129** *L* **6** # 41

Hajduczenia, Marek ZTE Corp.

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

What is a 'stripe' of data?

SuggestedRemedy

Please clarify or use some more descriptive identification of what is a data stripe ...

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change:
"stripe the data to multiple lanes"
to:
"distributes the data to multiple PCS lanes"

to be consistent with sections in Clause 82 (see related comment: #79)

Cl **80** *SC* **80.2.2** *P* **129** *L* **6** # 265

Trowbridge, Stephen ALCATEL-LUCENT

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment #41

Cl **80** *SC* **80.2.3** *P* **128** *L* **9** # 346

Nikolich, Paul YAS Broadband Ventu

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The 40GBASE-CR4 and 100GBASE-CR10 PMDs will meet the BER requirements of 1E-12 without the use of the optional FEC sublayer. The optional FEC sublayer can be used to achieve better BER performance over 1E-12, if desired, or to increase the performance on a broader set of backplane channels. Auto-negotiation of FEC will prevent inter-operability problems since the FEC function is enabled on the link only if both the link partners advertise FEC ability and at least one of the link partners requests to enable the FEC function.

Provide a explanation for copper PHYs in 74.1 as follows:
Change line 13 in 74.1 as follows:
"The 10GBASE-KR and 40GBASE-KR PHYs described in Clause 72 and Clause 84 optionally use the FEC sublayer to increase the performance on a broader set of backplane channels as defined in Clause 69."
Insert the following after line 13 in 74.1:
"The 40GBASE-CR4 and 100GBASE-CR10 PHYs described in Clause 85 optionally use the FEC sublayer to increase the BER performance beyond 10^-12."

Cl **80** *SC* **80.2.4** *P* **129** *L* **20** # 86

Gustlin, Mark Cisco Systems, Inc.

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

In this sentance: "The 40GBASE-R and 100GBASE-R PMAs perform the mapping of transmit and receive data streams between the PCS and PMA via the PMA service interface, and the mapping and multiplexing of transmit and receive bit streams between the PMA and PMD via the PMD service interface"
It is not consistent in terminology: first is says data streams then it says bit streams, make it consistent.

SuggestedRemedy

as above

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

On line 22: Change "bit streams" to "data streams" to be consistent with the previous sentence.

Cl **80** *SC* **80.2.4** *P* **129** *L* **22** # 42

Hajduczenia, Marek ZTE Corp.

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

Missing comma after 'In addition'

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **80** *SC* **80.2.6** *P* **129** *L* **43** # 803

Chalupsky, David Intel Corporation

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

sentence structure difficult to read.

SuggestedRemedy

replace "Clause 73 Auto-Negotiation is used by 40 Gb/s backplane PHY (40GBASE-KR4, see Clause 84) and,
40 Gb/s and 100 Gb/s copper PHYs (40GBASE-CR4 and 100GBASE-CR10, see Clause 85)."
with "Clause 73 Auto-Negotiation is used by the 40 Gb/s backplane PHY (40GBASE-KR4, see Clause 84) and the
40 Gb/s and 100 Gb/s copper PHYs (40GBASE-CR4 and 100GBASE-CR10, see Clause 85)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **80** *SC* **80.3.1** *P* **130** *L* **21** # 43

Hajduczenia, Marek ZTE Corp.

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

It is not clear what layer N and N-1 really is. Are these just examples? Suggest then to insert a sentence before line 21 with the following statement."In the following description, layer N represents an upper layer while layer N-1 represents a lower layer, connected via a service interface with a set of specific service primitives."

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The terms "lower sublayer N-1" and "higher sublayer N" is used the description to explain the relative location of sublayers N and N-1. Also the use of N and N-1 is consistent with notations defined in 1.2.2

Cl **80** *SC* **80.3.2** *P* **131** *L* **26** # 87

Gustlin, Mark Cisco Systems, Inc.

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

In figure 80-2, there is a definition for XLAUI, but no mention of XLAUI in the diagram, it might make sense to label the interface between the 2 pmas as an optional XLAUI. Either that or remove the definition of XLAUI. Same comment in figure 80-3 for CAUI.

SuggestedRemedy

as above

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Figures 80-2 & 80-3 illustrate the service interface relative to the sublayers. XLAUI and CAUI are physical instantiation of PMA service interface(s) which is defined in Clause 83.

Delete XLAUI from Fig 80-2 and CAUI from Fig 80-3.

Cl **80** *SC* **80.3.2** *P* **132** *L* **47** # 44

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This subclause provides definition of generic service interfaces at different sublayers. "n" (as opposed to a fixed number) is used at the 100G PMD service interface to accommodate future developments in number of parallel streams of data units at this interface.

Cl **80** *SC* **80.4** *P* **134** *L* **51** # 445

Anslow, Peter Nortel Networks

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

Since P802.3bb was approved in December 2009 can this Editors' note be removed?

SuggestedRemedy

Remove Editor's note if possible.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Detete the Editor's note.

Cl **80** *SC* **80.4** *P* **135** *L* **23** # 89

Gustlin, Mark Cisco Systems, Inc.

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

Seems strange to have a blank row for separating 40G from 100G, delete the row and add a thick border between the two instead.

SuggestedRemedy

as above

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **80** *SC* **80.4** *P* **135** *L* **5** # 446

Anslow, Peter Nortel Networks

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

Comment 275 against D 2.1 increased the delay for the MAC Control/MAC/RS for 40G from 20 to 32 pause quanta. However the Maximum in bit times was not updated from 10240 to 16384

SuggestedRemedy

Change the Maximum in bit times for 40G MAC, RS, and MAC Control to 16384

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **80** *SC* **80.4** *P* **135** *L* **5** # 276

Muller, Shimon Sun Microsystems

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

The delay constraint, expressed in bit times, for the 40G MAC, RS and MAC Control, is incorrect and does not correspond to the values in pause_quanta and absolute time in ns. It is also different from the value used elsewhere in the draft.

SuggestedRemedy

Relace "10240" with "16384".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See response to comment #446

Cl **80** *SC* **80.4** *P* **135** *L* **5** # 88

Gustlin, Mark Cisco Systems, Inc.

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

The maximum bit time entry for 40G mac should be 16384, not 10240.

SuggestedRemedy

as above

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See response to comment #446

Cl **80** *SC* **80.5** *P* **136** *L* **10** # 47

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The current definition of Skew Variation provides better clarity than the suggested text.

Cl **80** *SC* **80.5** *P* **136** *L* **12** # 48

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per explain what is meant in here and remodel the text for clarity.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The PCS can reorder the PCS lanes if they are received in different order from transmission due to skew and multiplexing (See 82.2.13). However once the lane is in operation the skew variation should be limited as per the requirements of Table 82-5.

Cl **80** *SC* **80.5** *P* **136** *L* **42** # 52

Hajduczenia, Marek ZTE Corp.

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

This comment is against Figure 80-4 and Figure 80-5. Captions read: Figure 80-4--40GBASE-R and 100GBASE-R skew points 1Figure 80-5--40GBASE-R and 100GBASE-R skew points 2it would be nice to provide a more precise description of the scenarios i.e. Figure 80-4--40GBASE-R and 100GBASE-R skew points for implementation without XLAUI/CAUI interfaceFigure 80-5--40GBASE-R and 100GBASE-R skew points for implementation with XLAUI/CAUI interface

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Both the Figures include XLAUI and CAUI. Figure 80-4 includes single XLAUI and CAUI whereas Figure 80-5 is for multiple XLAUI and CAUI interfaces.

Cl **80** *SC* **80.5** *P* **136** *L* **50** # 49

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The current description on the location of skew points is sufficiently clear, so a bulleted list is not needed.

Cl **80** *SC* **80.5** *P* **136** *L* **6** # 45

Hajduczenia, Marek ZTE Corp.

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

Editorial: not (See 82.2.12) but (see 82.2.12)Also in the same line: not "The Skew" but "The skew"

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change "(See 82.2.12)" to "(see 82.2.12)"

Cl **80** *SC* **80.5** *P* **136** *L* **7** # 46

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The current description of Skew is sufficiently clear. The allowable limits for Skew and Skew variation are provided in Table 80-4 and Table 80-5 and specified in associated clauses as referenced in the tables.

Cl **80** *SC* **80.5** *P* **137** *L* **1** # 50

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The current description on the location of skew points is sufficiently clear, so a bulleted list is not needed.

Cl **80** *SC* **80.5** *P* **137** *L* **5** # 51

Hajduczenia, Marek ZTE Corp.

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

Change two occurences of "shown" to "given"

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The current description provides sufficient clarity. Tables 80-4 and 80-5 provide the summary of Skew & Skew Variation constraints and the requirements are specified in respective clauses referenced in those tables.

Cl **80** *SC* **80.5** *P* **138** *L* **1** # 53

Hajduczenia, Marek ZTE Corp.

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

This comment is against Table 80-4 and 80-5(1) Insert Footnote for column "Maximum Skew for 40GBASE-R PCS lane (UI)" and "Maximum Skew for 100GBASE-R PCS lane (UI)" with the following text "These values are only approximations of the Maximum Skew value (expressed in ns), based on conversion between the units of ns and UI.". Remove characters "

SuggestedRemedy

from all columns in table 80-4 and 80-5. (2) remove footnote b and c from table 80-4 and footnote a and b from table 80-5. (3) insert a new foonote to column Maximum Skew for 40GBASE-R PCS lane (UI)" in Table 80-4 and 80-5 with the following text. "For 40GBASE-R, 1 UI is equal to 96.969697 ps at PCS lane signaling rate of 10.3125 GBd"(4) insert a new foonote to column "Maximum Skew for 100GBASE-R PCS lane (UI)" in Table 80-4 and 80-5 with the following text. "For 100GBASE-R, 1 UI is equal to 193.939394 ps at PCS lane signaling rate of 5.15625 GBd"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The approximately equal to character has been used to unabiguously indicate that the values are not exactly equal to. The existing table footnotes provide sufficient clarity.

Cl **80** *SC* **80.6** *P* **139** *L* **1** # 54

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This section provides information on the conventions adopted by P802.3ba for state diagrams.

Cl **81** *SC* **81** *P* **141** *L* **1** # 55

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment. MII should be finally used as a acronym

Proposed Response *Response Status* **W**

PROPOSED REJECT.
There already exists a MII elsewhere in the standard so calling this clause an MII would be confusing. Instead we define two distinct versions, XLGMII and CGMII.

Cl **81** *SC* **81** *P* **141** *L* **1** # 62

Hajduczenia, Marek ZTE Corp.

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

Nowehere in this clause is the number of transfers per second mentioned. In clause 46, there is" 46.1.3 Rate of operation", which at least defines what data rate the MII operates at. Here, in Clause 81, such section does not exist. Why?

SuggestedRemedy

Please add a corresponding section defining data rate of MII operation in clause 81.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Clause 81 follows the model of clause 46, there does exist a section 81.1.3 Rate of operation which is similar in content to 46.1.3, and then the number of transfers is defined in 82.1.4., which is similar to 49.1.5.

Cl **81** *SC* **81** *P* **160** *L* **51** # 218

Turner, Edward J Gnodal Limited

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

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

SuggestedRemedy

Thicken the line at bottom of table

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **81** *SC* **81.1** *P* **141** *L* **49** # 264

Trowbridge, Stephen ALCATEL-LUCENT

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

The words "multi-lane" generally refer to multiple PCS lanes, generic service interface lanes, or PMD lanes. Using this term in the context of the RS makes it sound as though the RS extends further down the stack than it does.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **81** *SC* **81.1** *P* **141** *L* **50** # 57

Hajduczenia, Marek ZTE Corp.

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

The Physical Coding Sublayer (PCS) is specified to the XLGMII/CGMII, - what does it mean? Do you mean to say that PCS is adapted to XLGMII/CGMII, or there is some other meaning ??? Please clarify

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
It means simply that the PCS is specified to the XLGMII/CGMII interface, but stating inteface would be redundant.

Cl **81** *SC* **81.1** *P* **141** *L* **7** # 56
Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This wording is consistent with other clauses, even 10G which is also full duplex.
See comment #36 also.

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

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

(1) Change "It provides independent 64-bit-wide transmit and receive data paths." to "It provides independent 64-bit wide transmit and receive data paths."(2) "It provides for full duplex operation only." to "It support full duplex operation only."

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Make Change #1, and then #2 is:
"It supports full duplex operation only."

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

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Sentances are correct as is.

Cl **81** *SC* **81.1.2** *P* **142** *L* **31** # 60
Hajduczenia, Marek ZTE Corp.

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

identical media access controller may be used with all PHY types. - "all PHY types" seems very generic. Change to "identical media access controller may be used with supported PHY types."

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **81** *SC* **81.1.3** *P* **142** *L* **35** # 61
Hajduczenia, Marek ZTE Corp.

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

The XLGMII has been specified to support 40Gb/s and the CGMII is specified to support 100Gb/s. change to "The XLGMII is specified to support 40Gb/s operation and the CGMII is specified to support 100Gb/s operation."

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **81** *SC* **81.1.4** *P* **142** *L* **48** # 447

Anslow, Peter Nortel Networks

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

The Maximum (ns) values in Table 80-3 should match the values in Table 81-1

SuggestedRemedy

Since the exact values are fairly simple, change "tilde 410" to "409.6" and change "tilde 246" to "245.76"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **81** *SC* **81.1.4** *P* **142** *L* **49** # 810

Bennett, Michael Lawrence Berkeley Na

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

What do the tildes mean in the Maximum (ns) column in Table 81-1? One use for a tilde is to mean approximately. If that is the case, how does one "meet the values specified in Table 81-1", specifically in the column using approximate values? Especially when the paragraph states the maximum cumulative delay shall meet the values specified in the table.

SuggestedRemedy

If the current use of tildes means approximately, then remove the tilde and use a maximum value, i.e. if the value is +/- 10 ns then add 10 ns and it will be a maximum.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Comment #447 proposes to remove the ~ so we will just have the exact value as in table 80-3.

Cl **81** *SC* **81.1.4** *P* **142** *L* **49** # 277

Muller, Shimon Sun Microsystems

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

The use of an approximate value in a table that is covered by a shall statement seems to be inappropriate. It is also inconsistent with most of the other clauses that chose to use the exact absolute time values for the delay constraints expressed in ns. Since this value is well defined, is there any reason why the precise value should not be used?

SuggestedRemedy

Replace "~410" with "409.6" and "~246" with "245.76".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Duplicate of #447.

Cl **81** *SC* **81.1.5** *P* **143** *L* **3** # 63

Hajduczenia, Marek ZTE Corp.

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

The allocation of functions at the XLGMII/CGMII balances the need for media independence with the need for a simple interface. The XLGMII and CGMII maximize media independence by cleanly separating the Data Link and Physical Layers of the OSI seven-layer reference model.Change to "The allocation of functions at the XLGMII/CGMII balances the need for media independence with interface simplicity. The XLGMII and CGMII maximize media independence by separating the Data Link and Physical Layers of the OSI seven-layer reference model."

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **81** *SC* **81.1.6** *P* **143** *L* **11** # 64

Hajduczenia, Marek ZTE Corp.

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

a schematic view of the RS inputs and outputs change to "a schematic view of the RS input and output signals"

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Some are signals and some are primitives so this does not improve the statement.

Cl **81** *SC* **81.1.6** *P* **143** *L* **29** # 65

Hajduczenia, Marek ZTE Corp.

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

The 64 TXD and eight TXC signals shall > "The sixty-four TXD and eight TXC signals shall ""as shall the 64 RXD and" > "as shall the sixty-four RXD and"Line 31: "and RX_CLK for receive" > "and RX_CLK for receive paths"Line 36: "indicated by assertion of TXC and RXC, respectively" > "indicated by assertion of an appropriate signal - TXC or RXC - respectively"

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **81** *SC* **81.1.7** *P* **144** *L* **6** # 66
Hajduczenia, Marek ZTE Corp.

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

therefore, PLS service primitives supporting CSMA/CD operation are not mapped through the RS to the XLGMII/CGMII.it is the reason why we should not even mention support for CSMA/CD MAC, since these functions are not hooked to anything so the MAC operates on reduced function set anyway.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
No change to the draft. Related to comment #56.

Cl **81** *SC* **81.1.7.1.2** *P* **144** *L* **27** # 67
Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The proposal is a little confusing since there is also the data complete value.

Note: Corrected the page to 144 (was 143).

Cl **81** *SC* **81.1.7.1.4** *P* **144** *L* **45** # 68
Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Note: Corrected the page to 144 (was 143).

Cl **81** *SC* **81.2** *P* **146** *L* **29** # 69
Hajduczenia, Marek ZTE Corp.

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

The data stream is a sequence of bytes, since it is a definition, we define a data stream. Change the text to read "A data stream is a sequence of bytes, "

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **81** *SC* **81.2.2** *P* **147** *L* **49** # 70
Hajduczenia, Marek ZTE Corp.

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

Change lines 49 - 51 to read "bit value of <sfd> at the XLGMII/CGMII is the same as the Start Frame Delimiter (SFD) specified in 4.2.6 and equal to: 10101011"

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Correct as is.

Cl **81** *SC* **81.2.2** *P* **148** *L* **10** # 71
Hajduczenia, Marek ZTE Corp.

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

Change line 10 to read: "The XLGMII/CGMII <preamble> and <sfd> carry the following values:"

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Correct as is.

Cl **81** *SC* **81.2.5** *P* **148** *L* **30** # 72

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **81** *SC* **81.3.1.3** *P* **150** *L* **1** # 73

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
I assume the commentor meant that the "T" should be centered, center the the "T".

Cl **81** *SC* **81.3.3.3** *P* **156** *L* **27** # 74

Hajduczenia, Marek ZTE Corp.

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

Missing comma after "Upon recognition of a fault condition "

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **81** *SC* **81.3.4.2** *P* **157** *L* **47** # 75

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Duplicate of #278

Cl **81** *SC* **81.3.4.2** *P* **158** *L* **11** # 278

Muller, Shimon Sun Microsystems

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

It seems that the entire Link Faul Signaling section has been copied from clause 46 (with the relevant modifications), except for the state diagram itself.
Saving trees is a good thing. However, state diagrams are too important to be scattered around and be referenced to in different portions of the standard, 35 clauses apart. It would greatly help "making it easy for the reader to select relevant specification" (from our 5-criteria) if all the relevant state diagrams were in one place.

SuggestedRemedy

Copy the Link Faul Signaling state diagram from Figure 46-9 to the end of this subclause.
Also, change all references from Figure 46-9 to this new figure, Figure 48-9.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Duplicate of #75.

Cl **81** *SC* **81.4** *P* **159** *L* **2** # 448

Anslow, Peter Nortel Networks

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

The title of subclause 81.4 should contain the clause 81 title.

SuggestedRemedy

Change "and Media Independent Interface (XLGMII/CGMII)" to "and Media Independent Interface for 40 Gb/s and 100 Gb/s operation"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **81** *SC* **81.4.2.2** *P* **159** *L* **45** # 76

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Duplicate of #393, change to IEEE Std 802.3ba-20xx

Cl **81** *SC* **81.4.2.3** *P* **160** *L* **1** # 77

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Break out the PHY, RS and G1 entries, 1 per rate.

Cl **81** *SC* **81.4.3** *P* **160** *L* **12** # 449

Anslow, Peter Nortel Networks

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

The title of 81.4.3 is "PICS proforma Tables for Reconciliation Sublayer and 10 Gigabit Media Independent Interface" which is incorrect.

SuggestedRemedy

Change title to "PICS proforma Tables for Reconciliation Sublayer and Media Independent Interface for 40 Gb/s and 100 Gb/s operation"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **81** *SC* **81.4.3.1** *P* **160** *L* **24** # 450

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

Change "round-trip delay" to "delay"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82** *P* **165** *L* **1** # 185

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
There is only a single use of " control octect", so change:
"All other characters are control octets and
are transferred with the corresponding TXC or RXC bit set to one"
To:
"All other characters are control characters and are transferred with the corresponding TXC or RXC bit set to one" Page 170 L49.

Cl **82** *SC* **82** *P* **169** *L* **45** # 826

Dudek, Michael QLogic Corporation

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

64B/66B code does not have a high transition density. It relies on the scrambler to provide only marginally better than random data.

SuggestedRemedy

Delete has a high transition density and

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Earlier in the same paragraph it is stated that the encoding provides sufficient transitions so the transition density statement is not needed.

Cl **82** *SC* **82** *P* **169** *L* **50** # 827

Dudek, Michael QLogic Corporation

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

Figure 82-3 is a long way from here and is out of order.

SuggestedRemedy

Put it in order and move it closer

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82** *P* **171** *L* **1** # 183

Hajduczenia, Marek ZTE Corp.

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

This comment is about Figure 82-4. (1) It would be beneficial to add 64B/66B decoder into this figure, since only descramber is shown, but decoder is not shown at all(2) instead of showing "inst:IS_UNITDATA_3.indication or inst:IS_UNITDATA_19.indication", show "inst:IS_UNITDATA_19.indication (for 100GBASE-R) inst:IS_UNITDATA_3.indication (for 40GBASE-R)".(3) There is a text field saying "Input to decoder function" but there is no indication of where the decoder function isSimilar comment about Figure 82-3, page 173(1) It would be beneficial to add 64B/66B encoder into this figure, since only descramber is shown, but encoder is not shown at all.(2) There is a text field saying "Output of encoder function" but there is no indication of where the encoder function is

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Implement #2, the other suggestions would unecessarily complicate the diagram.

Cl **82** *SC* **82** *P* **171** *L* **1** # 184

Hajduczenia, Marek ZTE Corp.

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

Why is Figure 82-4 and Figure 82-5 before Figure 82-3 ? Please put them in a correct order.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82** *P* **174** *L* **25** # 219

Turner, Edward J Gnodal Limited

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82** *P* **178** *L* **35** # 221

Turner, Edward J Gnodal Limited

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** SC **82** P **178** L **6** # 220
Turner, Edward J Gnodal Limited

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

Table 82-2. All lines are the same thickness.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** SC **82** P **179** L **15** # 222
Turner, Edward J Gnodal Limited

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** SC **82** P **180** L **42** # 223
Turner, Edward J Gnodal Limited

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** SC **82** P **187** L **10** # 224
Turner, Edward J Gnodal Limited

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** SC **82** P **187** L **29** # 225
Turner, Edward J Gnodal Limited

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

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

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

PICS table does not have space above Date of statement

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Add a space to make it consistent with other clauses.

Cl **82** *SC* **82** *P* **196** *L* **25** # 227
Turner, Edward J Gnodal Limited

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

Table line thickness of PICS tables is not same as in other clauses.

SuggestedRemedy

Use thicker lines for the table border and around the title cells, as per tables in the other clauses. Apply to all tables in this subsection.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82** *P* **196** *L* **4** # 226
Turner, Edward J Gnodal Limited

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

Table line thickness of PICS table is not same as in other clauses.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82** *P* **198** *L* **35** # 229
Turner, Edward J Gnodal Limited

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

Table line thickness of PICS tables is not same as in other clauses.

SuggestedRemedy

Use thicker lines for the table border and around the title cells, as per tables in the other clauses. Apply to all tables in this subsection.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82** *P* **198** *L* **4** # 228
Turner, Edward J Gnodal Limited

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

Table line thickness of PICS tables is not same as in other clauses.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82..2.18.3** *P* **194** *L* **26** # 786
Ghiasi, Ali Broadcom

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

A good packet may get corrupted if followed by a runt packet across these 2 blocks if aligned as such. Note a runt packet (including S and T) that is 9 octets or greater is not a problem. Also having a minimum of 15 C's between packets is not a problem either.
The first 8 octets comprise RTYPE = T, the next 8 octets comprise RTYPE_NEXT = E
This causes Figure 82-15 to transition from RX_D to RX_E instead of RX_T. In effect, a good packet would be corrupted.

SuggestedRemedy

A possible solution is to define a block format to Figure 82-5, "R" to cover the runt packet. This would prevent this block from being labeled as an invalid or error block.
Figure 82-15 could be updated in the transition from RX_D to RX_T to include "R", R_TYPE_NEXT = (S + C + R)
see ghiasi_02_0110

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The state machine is optimized to prevent corrupted packets from entering the MAC, this is at the cost of a few corner cases which might drop what is possibly a good packet immediately after an error.

Cl **82** *SC* **82.1.1** *P* **165** *L* **15** # 78

Hajduczenia, Marek ZTE Corp.

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

(1) "Both 40GBASE-R and 100GBASE-R are based on a 64B/66B code. " change to read "Both 40GBASE-R and 100GBASE-R use a 64B/66B code. "(2) "The 64B/66B code supports data" change to read "The 64B/66B code supports transmission of data"

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement #2 above only.

Cl **82** *SC* **82.1.1** *P* **165** *L* **16** # 79

Hajduczenia, Marek ZTE Corp.

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

What is 'data striping' ? This concept is new and has not been defined anywhere. Examplain, or define

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "striping" to "distribution" to be consistent with later sections.

Cl **82** *SC* **82.1.1** *P* **165** *L* **18** # 80

Hajduczenia, Marek ZTE Corp.

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

allows the receive PCS to align data from multiple lanes. change to read "allows the receiving PCS to align data across multiple lanes."

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Correct as is.

Cl **82** *SC* **82.1.2** *P* **165** *L* **26** # 81

Hajduczenia, Marek ZTE Corp.

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

In addition to 64B/66B encoding is a methodology to add alignment markers and distribute data to multiple lanes. this sentence reads plain old strange. Can you clarify it, separating into two independent sentences, which will be much clealer.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. From:
In addition to 64B/66B encoding is a methodology to add alignment markers and distribute data to multiple lanes.
To:
In addition a methodology to add alignment markers and distribute data to multiple lanes is added on top of the 64B/66B encoding.

Cl **82** *SC* **82.1.3** *P* **166** *L* **3** # 82

Hajduczenia, Marek ZTE Corp.

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

Figure 82--1 depicts the relationship between the 40GBASE-R PCS and 100GBASE-R PCS and their associated sublayers. - this is not what the caption in Figure 82-1 says. Align them please.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change:
"Figure 82-1 depicts the relationship between the 40GBASE-R PCS and 100GBASE-R PCS and their associated
sublayers."
To:
Figure 82-1 shows the relationship of the 40GBASE-R PCS and 100GBASE-R PCS sublayers (shown shaded) with other sublayers to the ISO Open System Interconnection (OSI) reference model."

Cl **82** *SC* **82.1.4** *P* **167** *L* **16** # 83

Hajduczenia, Marek ZTE Corp.

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

It is not clear how you change from 10.3125 Gtransfers/s for per PCS lane to 40G transmission capacity. Likewise, it is not clear how you change from 5.15625 Gtransfers/s per PCS lane to 100G transmission capacity. Some text needs to be added, which clarifies how many PCS lanes are aggregated to provide the overal transmission capacity.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This is per PCS lane, the nubmer of PCS lanes are detailed elshwere for each speed, so it is a simple multiplication to get the aggregate rate.

Cl **82** *SC* **82.1.4.1** *P* **167** *L* **31** # 451

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

Change "defined in 83.2" to "defined in 83.3"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.1** *P* **167** *L* **48** # 452

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

Change "TXCn" to TXC<n> and "RXCn" to RXC<n>

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.1** *P* **168** *L* **1** # 84

Hajduczenia, Marek ZTE Corp.

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

In Figure 82--2, "inst:IS_UNITDATA_i.request: is repeated twice, so is "inst:IS_UNITDATA_i.indication ". Remove the second occurence of these interface descriptions - they are not needed

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.10** *P* **180** *L* **12** # 458

Anslow, Peter Nortel Networks

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

This says "is from the BASE-R PCS test-pattern control register (register 3.42.3)". But 3.42.3 is a bit, not a register.

SuggestedRemedy

Change "(register 3.42.3)" to "(bit 3.42.3)". Make the equivalent change on Page 181 line 44

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.10** *P* **180** *L* **15** # 214

Hajduczenia, Marek ZTE Corp.

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

Provide a reference to the described functionality.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
From:
When the transmit channel is operating in test-pattern mode, the encoded bit stream is distributed to the PCS
Lanes as in normal operation.
To:
When the transmit channel is operating in test-pattern mode, the encoded bit stream is distributed to the PCS
Lanes as in normal operation (see 82.2.6).

Cl **82** *SC* **82.2.10** *P* **180** *L* **3** # 213

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
#1,2 - implement
#3 - correct as is.

Cl **82** *SC* **82.2.11** *P* **180** *L* **20** # 621

Dambrosia, John Force 10 Networks Inc

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

No corresponding PIC statement for this text - It shall form 4 or 20
bit streams from the primitives by concatenating the bits from the indications of each primitive in order from
each inst:IS_UNITDATA_0.indication to inst:IS_UNITDATA_3.indication or
inst:IS_UNITDATA_0.indication
to inst:IS_UNITDATA_19.indication.

SuggestedRemedy

add corresponding pic statement

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.11** *P* **180** *L* **22** # 266

Trowbridge, Stephen ALCATEL-LUCENT

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

In the Rx direction, while the incoming lanes of the generic service interface correspond to PCS lanes, they have not been identified as a particular PCS lane at the point of the lane lock or alignment marker lock processes. The lane numbering with respect to the status variables that go with these processes will, in general, be different than the lane numbering for PCSLs (e.g., by the time you count BIP-8 errors, you know which PCSL is which). The two sets of lane numbers could be confusing, and it would be better not to refer to incoming lanes of the generic service interface which have not yet been identified as a particular PCSL as PCSLs.

SuggestedRemedy

Change the name of the "PCS lane lock" process to simply the "Lane lock" process, and the name of the "PCS alignment marker lock" process to simply the "Alignment marker lock" process (many places in the text plus the actual state diagrams Fig 82-10, 82-11, variables, and MDIO status registers). Before lanes can be identified as PCSLs, they are service interface lanes. Note that Figure 82-2 appears to be OK as it simply says "LANE BLOCK SYNC" and "ALIGNMENT LOCK" without referring to them as PCSLs. The MDIO register names for alignment seem OK since they are not called PCSLs until they are locked and aligned. The individual lane lock variables are just called "Lane lock". A note should be inserted to alert readers that the Rx service interface lane numbering and PCSL lane numbering may be different. A mapping variable between service interface lanes and the PCSLs received on them could be introduced.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Make the changes as proposed in gustlin_04_0110.

Cl **82** *SC* **82.2.12** *P* **180** *L* **27** # 215

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
#1 Ok as is.
#2:Change to: "Once the receiver achieves PCS lane lock on all PCS lanes (4 lanes for 40GBASE-R or 20 lanes for 100GBASE-R), the process of deskewing"
#3: Ok as is.
#4 Ok as is.

Cl **82** *SC* **82.2.14** *P* **180** *L* **13** # 748

Barrass, Hugh Cisco Systems, Inc.

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

Change register addresses according to HB_17. Note that the register address range is currently wrong.

SuggestedRemedy

Change register addresses (currently 3.90-3.99) to 3.200-219. Also in Table 82-7, p.187

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
See also #720 (AKA HB_17) and related is #459.

Cl **82** *SC* **82.2.14** *P* **181** *L* **12** # 459

Anslow, Peter Nortel Networks

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

There are 20 BIP error counter registers 3.90 through 3.109

SuggestedRemedy

Change "(registers 3.90 through 3.99)" to "(registers 3.90 through 3.109)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.14** *P* **181** *L* **14** # 105

Marris, Arthur Cadence Design Syste

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

Should the 3 in BIP3 be a subscript?

SuggestedRemedy

Make the 3 in BIP3 a subscript.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Dupe of #460

Cl **82** *SC* **82.2.14** *P* **181** *L* **14** # 460

Anslow, Peter Nortel Networks

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

BIP3 should have a subscripted "3"

SuggestedRemedy

Change the 3 in BIP3 to be a subscript.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Duplicate of #105

Cl **82** *SC* **82.2.14** *P* **181** *L* **7** # 90

Gustlin, Mark Cisco Systems, Inc.

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

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

SuggestedRemedy

as above

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.17** *P* **181** *L* **33** # 285

Dawe, Piers J G Independant

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

Following up on D2.2 comment 69, "There are two error counting mechanisms that can be used on 64B/66B signals: errored blocks and BIP errors... We should be unambiguous which is meant by BER for the purposes of compliance. As the errored block counter is not very good in service at marginal and good BERs, we expect in-service monitoring to use BIP (that's why it was introduced). It is HIGHLY desirable that the same definition of BER apply in compliance testing with the scrambled idle signal as in service."
Also it seems that the 82.2.17 test-pattern checker will typically count 2 for an isolated error while the 82.2.14 BIP checker will count 1. For isolated errors, the BIP checker will correspond to frame loss statistics.
Note that any change to the PCS operation would be a simplification, and option 1 below makes no change.

SuggestedRemedy

Option 1: no change to silicon: Add text to 82.2.17 line 33 "However, the BIP error count according to 82.2.14 is the preferred measure for BER." At 82.2.14 line 14, add "The BIP error count determines the BER for compliance purposes.".
Option 2: To bring the definition of BER in scrambled idle test pattern mode in line with the expected de-facto definition of errors in service, it would be desirable to change:
"When operating in scrambled idle test pattern, the test-pattern error counter counts blocks with a mismatch. Any mismatch indicates an error and shall increment the test-pattern error counter."
to
"When operating in scrambled idle test pattern, the test-pattern error counter counts BIP errors according to 82.2.14.".
There may be consequential changes to wording in Clause 45.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Comment #461 has more clearly defined how to determine a BER from the scrambled idle error counters, with these changes the BER derived from scrambled idles or BIP are basically equivelant for error rates of interest. So no need to favor one over the other.

Cl **82** *SC* **82.2.17** *P* **181** *L* **38** # 461

Anslow, Peter Nortel Networks

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

This says "the scrambled idle test-pattern checker observes the output from the descrambler", but But according to Figure 82-4, the sync bits bypass the descrambler. So, are the sync bits checked for errors or not? To make this checker and the BIP checker cover the same bits we should explicitly include the sync bits. Also the relationship between this count and BER is not obvious. See associated presentation anslow_04_0110.

SuggestedRemedy

Change "the scrambled idle test-pattern checker observes the output from the descrambler. When the output of the descrambler is the all idle pattern, a match is detected." to "the scrambled idle test-pattern checker observes the sync header and the output from the descrambler. When the sync header and the output of the descrambler is the all idle pattern, a match is detected." add at the end of this paragraph, "Because of the error multiplication characteristics of the descrambler, the incoming bit error ratio can be estimated by dividing the 66-bit block error ratio by a factor of 124." Also, add at the end of 82.2.14: "The incoming bit error ratio can be estimated by dividing the BIP block error ratio by a factor of 1 081 344."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See anslow_04_0110.

Cl **82** *SC* **82.2.18.2** *P* **182** *L* **6** # 203

Hajduczenia, Marek ZTE Corp.

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

This comment is against the whole subclause 82.2.18.2(1) Each variabel seems to have a different style of definition, which impairs reading and complicates analysis - please make them consistent.(2) To simplify analysis of state diagrams, it would be nice to include variable type information and its size as well. (3) What is "Boolean indication" ? Do you mean "Boolean flag" ?(4) definitio of am_status is less than readable - please consider using an equation if needed(5) in am_valid - who is this "we" ??(6) general comment: when number of bits is used as an adjective, it shoul dbe hyphenated e.g. 66-bit variable. Please scrube the draft for such occurences(7) "66b" should be replaced with "66-bit"

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

1- Make all boolean variables consistent, not "boolean indication", "boolean", only "boolean variable".
2 - no change
3 - See #1
4 - no change
5 - this sentence is being deleted by comment #359
6- Make this change throughout
7 - Make this change throughout, similar to comment #203.

Cl **82** *SC* **82.2.18.2.1** *P* **182** *L* **18** # 462

Anslow, Peter Nortel Networks

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

the other instances of "Local Fault ordered set" in this subclause have an underscore between "ordered" and "set"

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.18.2.2** *P* **182** *L* **30** # 463

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.18.2.2** *P* **182** *L* **45** # 359

Frazier, Howard M Broadcom

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

Colloquial language "Note that we do not know which marker to expect on which PCS lane."

SuggestedRemedy

Delete the sentence. The information is already conveyed by the text of 82.2.1, page 169 line 10.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.18.2.2** *P* **183** *L* **12** # 286

Dawe, Piers J G Independant

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

To future-proof the PCS, repeat the error propagation analysis for worst CRn, 25G lanes and 40G lanes, not just example (not worst) KR error propagation statistics. Remember that unlike KR, CRn is for multi-vendor use, not just for closed systems, and "adequate" MTTFPA must be VERY good indeed. A packet falsely accepted is a much more serious issue than a dropped packet.

SuggestedRemedy

Find the MTTFPA at the hi_ber limit using conservative estimates for error propagation, for CRn, 25G lanes, and 40G lanes. If necessary, change the hi_ber limit by changing the ber_cnt limit.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Appropriate MTTFPA analysis has been done for the PHYs that are part of this project.

Cl **82** *SC* **82.2.18.2.3** *P* **184** *L* **23** # 204
Hajduczenia, Marek ZTE Corp.

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

two sync bits bypass the scrambler > should read "two bits of the sync header bypass the scrambler" - it is not clear what these sync bits are., Sync header however is quite well defined.

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.18.2.3** *P* **184** *L* **40** # 205
Hajduczenia, Marek ZTE Corp.

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

A valid control character is one containing a control code specified in Table 82--1.change to "Valid control characters are specified in Table 82--1."

SuggestedRemedy

Table 82-1 defines clearly what they are composed of. No need to redefine. Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.18.2.4** *P* **185** *L* **20** # 168
Hajduczenia, Marek ZTE Corp.

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

66b should be "66-bit". Scrub the draft accordingly. Similarly, "64b" should be "64-bit".

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Note: Corrected the page to 185 line 20.

Cl **82** *SC* **82.2.18.2.4** *P* **185** *L* **22** # 170
Hajduczenia, Marek ZTE Corp.

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

(1) "This is always reset to zero if a" > "This counter is always reset when a"(2) "8-bit counter. When the receiver is in normal mode, errored_block_count counts once for each time" > "When the receiver is in normal mode, this 8-bit counter counts once for each time"(3) "16-bit counter. When the receiver is in test-pattern mode, the test_pattern_error_count counts" > "When the receiver is in test-pattern mode, this 16-bit counter counts"

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Correct as is.

Note: Corrected the page to 185 line 22.

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

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

This is now a 22 bit counter (see response to comment 217 against D 2.2). Note that there is another comment to correct Table 45-96a

SuggestedRemedy

Change "A 20-bit counter that counts" to "A 22-bit counter that counts" and change "and 3.44.13:0" to "and 3.44.15:0"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Dupe of #106

Cl **82** *SC* **82.2.18.2.4** *P* **185** *L* **25** # 106
Marris, Arthur Cadence Design Syste

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Dupe of #464

Cl **82** *SC* **82.2.18.2.4** *P* **185** *L* **31** # 465

Anslow, Peter Nortel Networks

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

This is now a 22 bit counter (see 45.2.3.16b). Note that there is another comment to correct Table 82-7

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.18.2.4** *P* **185** *L* **34** # 171

Hajduczenia, Marek ZTE Corp.

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

the current 64 or 1024 block window - how is this value set? Perhaps a reference would help.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
I have not see references to how numbers are derived in other IEEE specs, the numbers are from gustlin_03_1108.

Note: Corrected the page to 185 line 34.

Cl **82** *SC* **82.2.18.3** *P* **185** *L* **54** # 169

Hajduczenia, Marek ZTE Corp.

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

It is not 'sync field' but 'sync header', which has been in use in previous clauses in 802.3. Scrub the draft, since this new term is used in several other locations.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Note: Corrected the page to 185 line 54.

Cl **82** *SC* **82.2.18.3** *P* **186** *L* **10** # 176

Hajduczenia, Marek ZTE Corp.

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

PCS lane the markers must match each other and an entry from Table 82--2 for 100GBASE-R or Table 82--3 for 40GBASE-Rchange to read "PCS lane, the markers must match one of the possible values specified in Table 82--2 for 100GBASE-R or Table 82--3 for 40GBASE-R and match each other after the marker lock is acquired."

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Note: Corrected the page to 186 line 10.

Cl **82** *SC* **82.2.18.3** *P* **186** *L* **11** # 177

Hajduczenia, Marek ZTE Corp.

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

Note that the BIP3 and BIP7 fields are excluded from the markers when making a match to each other or the tableschange to "Note that the BIP3 and BIP7 fields are excluded from the markers when matching markers to each other or to possible values specified in Table 82--2 for 100GBASE-R or Table 82--3 for 40GBASE-R."

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Text is correct as is.
Note: Corrected the page to 186 line 11.

Cl **82** *SC* **82.2.18.3** *P* **186** *L* **14** # 752

Barrass, Hugh Cisco Systems, Inc.

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

In accordance with comment HB_18, it would be useful to include a set of PCS mapping registers for debug purposes.

SuggestedRemedy

Add the following paragraph: When the PCS alignment marker lock process achieves lock for a lane, it shall record the PMA service interface lane number that corresponds to the locked PCS lane in the appropriate PCS lane mapping register (3.400-3.419) see 45.2.3.39. - also update Table 82-7 and PICS.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The is part of the resolution of comment #266.

Cl **82** *SC* **82.2.18.3** *P* **186** *L* **22** # 172

Hajduczenia, Marek ZTE Corp.

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

1.25ms is used and in some other locations, the same value is referred to as "1250us" - use one base unit consistently.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change all instances to 1.25 ms.

Note: Corrected the page to 186 line 22.

Cl **82** *SC* **82.2.18.3** *P* **186** *L* **34** # 173

Hajduczenia, Marek ZTE Corp.

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

as specified in these state diagrams. > "as specified in the respective state diagrams."

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Note: Corrected the page to 186 line 34.

Cl **82** *SC* **82.2.18.3** *P* **186** *L* **8** # 287

Dawe, Piers J G Independant

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

Here, each PCS lane carries a stream of bits (like the PMA), it's not yet "data" before the PCS manipulates it.

SuggestedRemedy

Change "received data stream for a given PCS lane" to "received bit stream for a given PCS lane".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.18.3** *P* **190** *L* **13** # 279

Muller, Shimon Sun Microsystems

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

The am_invld_cnt variable assignment is state AM_RESET_CNT seems to be garbled.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.2** *P* **169** *L* **35** # 178

Hajduczenia, Marek ZTE Corp.

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

Change "provided by the rules in" to "defined in"

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.3** *P* **169** *L* **39** # 179

Hajduczenia, Marek ZTE Corp.

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

improve the transmission characteristics of information to be transferred across the link - what transmission characteristics are improved ? What does it mean that "transmission characteristics of information" are improved ?

SuggestedRemedy

Please clarify what this text mean.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The subsequent sentences explain and elaborate on this text.

Cl **82** *SC* **82.2.3** *P* **169** *L* **48** # 180

Hajduczenia, Marek ZTE Corp.

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

The relationship of block bit positions to XLGMII/CGMII, PMA, and other PCS constructs change to "The relationship of block bit positions relative to XLGMII/CGMII, PMA, and other PCS functions "

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.3** *P* **169** *L* **52** # 181

Hajduczenia, Marek ZTE Corp.

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

Note 6 on page 169 should be rewritten. It is clear how many lanes are used in specific PMDs, so it is also possible to define clearly what the run lengths are for individual PMD.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
I do not believe that specifying the run length for each pmd will be useful information since the run length is contained by the scrambler.

Corrected the page to 169.

Cl **82** *SC* **82.2.3** *P* **170** *L* **1** # 182

Hajduczenia, Marek ZTE Corp.

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

8 data octets. See 82.2.3.3 for information on how blocks containing control characters are mapped. Note that the sync header is generated by the encoder and bypasses the scramblerchange to "8 data octets. 82.2.3.3 contains information on how blocks containing control characters are mapped (into what??). Note that sync headers are generated by the 64B/66B encoder and bypass the scrambler"Also a question: it says that the "blocks containing control characters are mapped " - it is not clear what they are mapped into. Please clarify

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change:
"See 82.2.3.3 for information on how blocks containing control characters are mapped."
to:
"See 82.2.3.3 for information on how blocks containing control characters are mapped into 66-bit blocks."

Cl **82** *SC* **82.2.3.2** *P* **173** *L* **24** # 454

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Renumber only figure 82-4, 82-3 is ok as is and correlates with section 82.2.9.

Cl **82** *SC* **82.2.3.2** *P* **173** *L* **54** # 455

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

Correct the order of the figures.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Dupe of #827.

Cl **82** *SC* **82.2.3.3** *P* **172** *L* **3** # 186

Hajduczenia, Marek ZTE Corp.

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

In Figure 82-5, what does the "Input data" mean? is this the "xGMII data" as received from the particular MII type interface ??

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This is consistent with table 49-7.

Cl **82** *SC* **82.2.3.3** *P* **172** *L* **31** # 187

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The current solution was negotiated with many people in order to address the appropriate support for OTN objective.

Cl **82** *SC* **82.2.3.3** *P* **172** *L* **33** # 453

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

Change "The mapping of 40GBASE-R PCS into OPU3 specified" to "The mapping of 40GBASE-R PCS blocks into OPU3 specified". Also change "may prevent 40GBASE-R PCS from being mapped" to "may prevent 40GBASE-R PCS blocks from being mapped". Also, since G.709 has been added to the Bibliography add a reference "[Bx1]"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.3.4** *P* **172** *L* **41** # 188

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The subsequent sentences explain the relatioinship.

Cl **82** *SC* **82.2.3.4** *P* **172** *L* **46** # 189

Hajduczenia, Marek ZTE Corp.

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

into a 7-bit C code. - what is a C code and where it is defined ?

SuggestedRemedy

Please provide a reference to where such codes are defined.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change:
"The 40GBASE-R and 100GBASE-R PCS encode each of the other control characters into a 7-bit C code"
To:
"The 40GBASE-R and 100GBASE-R PCS encode each of the other control characters into a 7-bit Control Code"

Cl **82** *SC* **82.2.3.4** *P* **172** *L* **54** # 190

Hajduczenia, Marek ZTE Corp.

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

maintain the Hamming distance: 0x00, 0x2D, 0x33 and 0x66.change to "maintain the required Hamming distance: 0x00, 0x2D, 0x33 and 0x66."

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
There is no required hamming distance, though the bigger the better.clarify as follows:
Change:
"There are four unused values that
maintain the Hamming distance: 0x00, 0x2D, 0x33 and 0x66."
To:
"There are four unused values that
maintain this Hamming distance: 0x00, 0x2D, 0x33 and 0x66."

Cl **82** *SC* **82.2.3.4** *P* **173** *L* **1** # 3

Gustlin, Mark Cisco Systems, Inc.

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

Figure 82-3 is out of order.

SuggestedRemedy

Put the figure in order.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Dupe of #827.

Cl **82** *SC* **82.2.3.5** *P* **174** *L* **9** # 191

Hajduczenia, Marek ZTE Corp.

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

b) The block type field contains an invalid value (one not appearing in Figure 82--5).c) Any control character contains a value not in Table 82--1.change to read "b) The block type field contains an invalid value (one not included in Figure 82--5).c) Any control character contains a value not included in Table 82--1."

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Complete as is.

Cl **82** *SC* **82.2.3.6** *P* **174** *L* **27** # 192

Hajduczenia, Marek ZTE Corp.

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

(1) Table 82--1 contains definition of control codes. Is this the same as C codes which are used in the same clause? If so, please make it consistent. (2) in subsequent sections, either Idle, idle or idle character is used. Is this the same ? If so, why multiply names for one and the same thing? Be consistent at least across the new clauses added in this project.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

#1 is addressed by comment #189, for #2 scrub and use idle control character.

Cl **82** *SC* **82.2.3.7** *P* **174** *L* **48** # 193

Hajduczenia, Marek ZTE Corp.

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

This comment is applicable to Clause 82.2.3.7/8/9/10. (1) Why there are changes to these clauses as compared with Clause 49 apart from the necessary changes (data rates, xGMII interface names)? (2) In 82.2.3.10, line 26, page 175"For both the encoder and decoder, the"should read "In both the 64B/66B encoder and decoder, the"(3) in 82.2.3.9, line 20, page 175"and shall delete only one of the two."should read "and one of the two ordered sets shall be deleted."(4) in 82.2.3.9, line 21, page 175"Signal ordered_sets are not deleted for clock"should read "Signal ordered_sets shall not be deleted for clock"

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
#1 - changes are made due to the 8B alignment compared to 4B alignment in clause 49.
#2 - Make this change.
#3 - Text is ok as is.
#4 - Text is ok as is.

Cl **82** *SC* **82.2.4** *P* **175** *L* **33** # 200

Hajduczenia, Marek ZTE Corp.

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

One XLGMII/CGMII data transfer is encoded into each block.change to read "One XLGMII/CGMII data transfer is encoded into one 66-bit block."

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.4** *P* **175** *L* **39** # 201

Hajduczenia, Marek ZTE Corp.

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

There are sufficient idles to delete in order to make room for alignment markers, in addition to handling clock compensation. Idles or sequence ordered sets are removed, if necessary, to accommodate the insertion of the 66b alignment markers.This means that MAC must make sure that there is enough idle between subsequent frames to send once in a while an alignment marker. How is that achieved? There is no word about it.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This is a specificaiton not an implementation guideline.

Cl **82** *SC* **82.2.5** *P* **175** *L* **50** # 202

Hajduczenia, Marek ZTE Corp.

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

to the scrambler used in Clause 49, see 49.2.6 for the definition of the scramblerchange to read "to the scrambler used in 10GBASE-R, see 49.2.6 for details."

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Corrrect as is.

Cl **82** *SC* **82.2.6** *P* **176** *L* **24** # 194

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The paragraph of 82.2.6 clearly states how many is n.

Cl **82** *SC* **82.2.6** *P* **176** *L* **5** # 456

Anslow, Peter Nortel Networks

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

This references just Annex 83A for XLAUI/CAUI

SuggestedRemedy

Change "(see Annex 83A)" to "(see Annex 83A and Annex 83B)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.7** *P* **176** *L* **31** # 196

Hajduczenia, Marek ZTE Corp.

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

Change "They interrupt any transfer that is already occurring" to read "Such blocks interrupt any data transfer that is already in progress"

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.7** *P* **176** *L* **33** # 197
Hajduczenia, Marek ZTE Corp.

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

periodically deleting IPG from the XLGMII/CGMII data stream. - this is the only location where IPG delection function is mentioned at all. Some more details would be more than welcome

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Not sure what details would help out here.

Cl **82** *SC* **82.2.7** *P* **176** *L* **36** # 198
Hajduczenia, Marek ZTE Corp.

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

and the alignment markers are removed before decoding is performed in the receive PCS.change to read "and the alignment markers are removed before 64B/66B decoding is performed in the receive PCS."

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Note: Corrected the line to 36.

Cl **82** *SC* **82.2.7** *P* **176** *L* **48** # 259
Trowbridge, Stephen ALCATEL-LUCENT

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

In Figure 82-7, "PCS lane n" should be "PCS lane n-1"

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.7** *P* **176** *L* **48** # 457
Anslow, Peter Nortel Networks

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

In Figure 82-7 the lane markers are numbered from 0 to n-1 but the PCS lanes are numbered from 0 to n in contrast to Figure 82-8 where they are 0 to n-1

SuggestedRemedy

In Figure 82-7 change the highest numbered PCS lane from "PCS Lane n" to "PCS Lane n-1"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Dupe of #259.

Cl **82** *SC* **82.2.7** *P* **176** *L* **51** # 195
Hajduczenia, Marek ZTE Corp.

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

(1) Figure 82-7 breaks the text block into two, please fix it - place the figure anchor in a correct location and fix settings for orpahns on this page. (2) Change caption in Figure 82-7 to read "Alignment market insertion function"

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
#1 - fix the text break.
#2 - I don't believe that the 'function' is required.

Cl **82** *SC* **82.2.7** *P* **176** *L* **54** # 199
Hajduczenia, Marek ZTE Corp.

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

data before descrambling is performed. change to read "data lanes before descrambling is performed. "

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.7** *P* **177** *L* **32** # 206

Hajduczenia, Marek ZTE Corp.

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

Change caption of Figure 82-9 to read "Alignment marker structure" - this seems to better reflect what is presented in the figure.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Format is accurate.

Cl **82** *SC* **82.2.7** *P* **177** *L* **42** # 207

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
#1 - I think this would be more confusing since octets are send lsb to msb. Leave as is.
#2 - Make this change.

Cl **82** *SC* **82.2.7** *P* **178** *L* **3** # 208

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.8** *P* **178** *L* **50** # 209

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
#1 - I don't consider this an improvement.
#2 - Not sure what is the commentor's suggestion.

Cl **82** *SC* **82.2.8** *P* **179** *L* **12** # 211

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The paragraph that refers to this figure gives the details.

Cl **82** *SC* **82.2.8** *P* **179** *L* **2** # 210

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.2.8** *P* **179** *L* **44** # 212

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
I belive it adds to clarifying exact bit ordering.

Cl **82** *SC* **82.3.1** *P* **187** *L* **13** # 466

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

In Table 82-6:
Change "Control register 1" to "PCS control 1 register" (2 places)
In Table 82-7:
Change the name of register 3.32 to "BASE-R and 10GBASE-T PCS status 1 register" (2 places)
Change "10/40/100GBASE-R and 10GBASE-T receive link status" to "BASE-R and 10GBASE-T receive link status"
Change "10/40/100GBASE-R and 10GBASE-T PCS high BER" to "BASE-R and 10GBASE-T PCS high BER"
Change "Multi-lane BASE-R PCS alignment status register 1 and 2" to "Multi-lane BASE-R PCS alignment status 1 and 2 registers"
Change "Multi-lane BASE-R PCS alignment status register 3 and 4" to "Multi-lane BASE-R PCS alignment status 3 and 4 registers"
Change "Multi-lane BASE-R PCS alignment status register 1" to "Multi-lane BASE-R PCS alignment status 1 register"
Change "10/40/100GBASE-R and 10GBASE-T PCS status 2 register" to "BASE-R and 10GBASE-T PCS status 2 register" (2 places)
Change "BIP error counters" to "BIP error counter, lane x" (MDIO status variable column)
Change "BIP error counter" to "BIP error counter, lane x register" (PCS register name column)
Change "3.90 through 3.99" to "3.90 through 3.109"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.3.1** *P* **187** *L* **45** # 467

Anslow, Peter Nortel Networks

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

The ber_count uses bits 13:8 of register 3.33, but also bits 0:15 of register 3.44
The errored_block_count uses bits 7:0 of register 3.33, but also bits 0:13 of register 3.45

SuggestedRemedy

Insert extra rows or modify the existing rows to reflect the missing registers and names.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.4** *P* **188** *L* **3** # 174

Hajduczenia, Marek ZTE Corp.

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

in many locations, the term "mode" is used. e.g. "Loopback mode". In all cases that the word "mode" is used, it should be preceded with 'the', which it is not in most cases. Also "Loopback mode" and "loopback mode" is used with different capitalization - make it uniform across all clauses.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Note: Corrected the page to 188 line 3.

Cl **82** *SC* **82.4** *P* **188** *L* **3** # 468

Anslow, Peter Nortel Networks

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

This says "The PCS shall be placed in Loopback mode when the Loopback bit in MDIO register is set to a logic one.", which is different from the style used in subclause 82.2.17 which is more helpful (even though Table 82.6 provides this information).

SuggestedRemedy

Change to "If a Clause 45 MDIO is implemented, then the PCS shall be placed in Loopback mode when the Loopback bit from the PCS control 1 register (bit 3.0.14) is set to a one."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.6** *P* **188** *L* **21** # 175

Hajduczenia, Marek ZTE Corp.

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

Support for the Auto-Negotiation process defined in Clause73 is mandatory. - why not make it into a 'shall' statement altogether if it is mandatory?

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change:
"The following requirements apply to a PCS used with a 40GBASE-KR4 PMD, 40GBASE-CR4 PMD or 100GBASE-CR10 PMD. Support for the Auto-Negotiation process defined in Clause 73 is mandatory."
to:
"The following requirements apply to a PCS used with a 40GBASE-KR4 PMD, 40GBASE-CR4 PMD or 100GBASE-CR10 PMD where support for the Auto-Negotiation process defined in Clause 73 is mandatory."

Note: Corrected the page to 188 line 21.

Cl **82** *SC* **82.6** *P* **189** *L* **1** # 167

Hajduczenia, Marek ZTE Corp.

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

In Figure 82-10, variable test_sh seem to be never set to true, even though it is used consistently in the state diagram

SuggestedRemedy

Either mark consiliton under which this variable is set to true or mark that on the state diagram somewhere.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
When it is true is defined in the variable definition.

Note: Corrected the page to 189 line 1.

Cl **82** *SC* **82.7** *P* **195** *L* **1** # 469

Anslow, Peter Nortel Networks

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

The line thicknesses of the Tables in the PICS section of clause 82 are not according to the usual style. (Thick round the outer edge and between the heading row and the body)

SuggestedRemedy

Change line thicknesses per the usual style.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.7** *P* **195** *L* **2** # 470

Anslow, Peter Nortel Networks

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

The title of subclause 82.7 should contain the clause 82 title.

SuggestedRemedy

Change "Physical Coding Sublayer (PCS) type 40GBASE-R and 100GBASE-R" to "Physical Coding Sublayer (PCS) for 64B/66B, type 40GBASE-R and 100GBASE-R" make the same change on line 37.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.7.3** *P* **196** *L* **11** # 471

Anslow, Peter Nortel Networks

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

The format of "O.1" is explained in 21.6.2: "O.<n> optional field/function, but at least one of the group of options labeled by the same numeral <n> is required". But in this case, there is only one PICS entry labelled with "O.1" so it doesn't make sense.

SuggestedRemedy

Either change another PICS entry to "O.1" or make this one "O"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Keep the PMA as is (O.1), but add a FEC entry also as O.1.

Cl **82** *SC* **82.7.3** *P* **196** *L* **6** # 165

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
#1 - the MII is has a reference which defines it. No change needed.
#2 - Break out the items by speed.

Corrected page and line.

Cl **82** *SC* **82.7.4.1** *P* **196** *L* **33** # 620

Dambrosia, John Force 10 Networks Inc

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

Items C3 and C4 should refer to 82.2.3.3, not 82.2.3

SuggestedRemedy

modify subclause # to 82.2.3.3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82.7.4.2** *P* **197** *L* **1** # 166

Hajduczenia, Marek ZTE Corp.

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

(1) in items S1, and S2, figure should be Figure(2) Table formating is incorrect (line width) - 82.7.4.2, 82.7.4.3, 82.7.4.4

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Corrected line and page.

Cl **82** *SC* **82.7.6.1** *P* **199** *L* **7** # 472

Anslow, Peter Nortel Networks

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

PICS entries SM1 and SM2 are both shown as "M" which implies that both 40GBASE-R and 100GBASE-R must be implemented. Also applies to SM4, SM5, SM8, SM9.

SuggestedRemedy

Change the PICS by adding 40GBASE-R and 100GBASE-R as options (*PCS40, *PCS100 to match the PMA format) in the "Major capabilities/options" table (see 88.12.3 *LR4, *ER4 for example). Then make PICS entries that are 40GBASE-R specific start with "PCS40:" and those for 100GBASE-R start with "PCS100:". e.g. SM1 would be PCS40:M. Applies to SM1, SM2, SM4, SM5, SM8, SM9.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **82** *SC* **82-11** *P* **190** *L* **12** # 104

Marris, Arthur Cadence Design Syste

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

In AM_RESET_CNT state am_invld_cnt is not written correctly

SuggestedRemedy

am_invld_cnt <= 0

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Dupe of #279.

Cl **83** *SC* **83** *P* **1** *L* **201** # 164

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Note that the actual change is to page 201 line 1 rather than page 1 line 201.

Cl **83** *SC* **83** *P* **216** *L* **49** # 230

Turner, Edward J Gnodal Limited

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

Table 83-4. No line at the bottom of the table.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83** *P* **219** *L* **3** # 231

Turner, Edward J Gnodal Limited

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

Table line thickness of PICS table is not the same as in other clauses.

SuggestedRemedy

Use thick lines for the table border and around the title cells and thin lines for the inside of the table, as per tables in the other clauses. Apply to PICS tables in 83.7.4, 83.7.5, 83.7.6

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.1.1** *P* **10** *L* **201** # 156

Hajduczenia, Marek ZTE Corp.

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

(40Gb/s and 100Gb/s) - remove - this is unnecessary since the transmission rate can be deduced from the PMD family names.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Table 80-2 contains both 40Gb/s and 100Gb/s PHYs. The 40GBASE-R PMA supports only those operating at a transmission rate of 40Gb/s and the 100GBASE-R PMA supports only those operating at a transmission rate of 100Gb/s.

Cl **83** *SC* **83.1.1** *P* **14** *L* **201** # 157

Hajduczenia, Marek ZTE Corp.

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

Physical Layers using the PMA defined here.change to read"Physical Layers using the PMA defined in this Clause".

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Note that the actual change is to page 201 line 14 rather than page 14 line 201.

Cl **83** *SC* **83.1.1** *P* **201** *L* **20** # 473

Anslow, Peter Nortel Networks

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

This says "The physical instantiation of the PMD service interfaces for 40GBASE-SR4 and 100GBASE-SR10 PMDs, known as XLPPI and CPPI, are defined in Annex 86A." But, XLPPI and CPPI are optional.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.1.1** *P* **22** *L* **201** # 158

Hajduczenia, Marek ZTE Corp.

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

PMD service interfaces for other PMDs are defined abstractly. change to read "PMD service interfaces for other PMDs are defined in an abstract manner".

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Note that the actual comment applies to page 201 line 22 rather than page 22 line 201.

Since there is not actually a clause that specifically defines an abstract PMD service interface associated with any particular PMD, replace:

"The PMD service interfaces for other PMDs are defined abstractly"
with
"The PMD service interfaces for other PMDs are defined in an abstract manner according to 80.3.1"

Cl **83** *SC* **83.1.2** *P* **29** *L* **201** # 159

Hajduczenia, Marek ZTE Corp.

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

Text similar to first block of this subclause is also used in other clauses - why is there is a need for new text to be invented in this clase? Use something similar in the lines of introductory text in clause 87 or 86.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace:
"Figure 83-1 depicts the relationships among the 40GBASE-R and 100GBASE-R sublayers (PMA shown shaded), the Ethernet MAC and reconciliation layers, the higher layers, and the ISO/IEC Open System Interconnection (OSI) reference model."

with:
"Figure 83-1 shows the relationship of the PMA sublayer (shown shaded) with other sublayers to the ISO Open System Interconnection (OSI) reference model."

Delete the sentence:
"The purpose of the PMA is to adapt the PCS Lanes (PCSLs) to an appropriate number of abstract or physical lanes and to optionally provide test signals and loopback."
as it is redundant with subclause 83.1.3

Cl **83** *SC* **83.1.3** *P* **34** *L* **202** # 162

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The use of m, n, p and q was arrived at over several iterations early in the project.

m and n are used consistently in the generic description of bit level multiplexing in a single direction of transmission, where m is the number of input lanes and n is the number of output lanes.

p and q are used consistently when describing the aggregate PMA with both directions of transmission, where p is the number of lanes to/from the direction of the PCS and q is the number of lanes to/from the direction of the PMD.

z is used consistently to indicate the number of PCS lanes (4 or 20) rather than PMA input or output lanes.

Cl **83** *SC* **83.1.3** *P* **46** *L* **201** # 160

Hajduczenia, Marek ZTE Corp.

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

What kind of function is "tolerate Skew Variation" ? This is a requiement for PMA.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

As with other PMA capabilities in the list, there is a terse description in the indicated place (page 201 line 46) with a more detailed description in later clauses. In 83.5.3 you find "Any PMA which combines PCSLs from different input lanes onto the same output lane must tolerate Skew Variation between the input lanes without changing the PCSL positions on the output."

Cl **83** *SC* **83.1.4** *P* **35** *L* **203** # 163

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

It isn't clear from the comment that there is a problem or that any new acronym is needed. The term used in the text is PCSL which is defined in 1.5. Other types of logical or physical lanes are input or output lanes of a sublayer or interface lanes and are clear from the context. Generally each of these lanes is comprised of bit-multiplexed PCSLs, which is why a unique term was chosen to represent this.

Cl **83** *SC* **83.1.4** *P* **50** *L* **201** # 161

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The PMA sublayer is different from any other in that there can be one or many, and it can go in different places in the stack (above or below a XLAUI/CAUI, above or below FEC). This section describes this variability given that you don't necessarily know which sublayer or interface is above or below a PMA.

Cl **83** *SC* **83.5.1** *P* **207** *L* **45** # 474

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.5.10** *P* **213** *L* **10** # 481

Anslow, Peter Nortel Networks

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

This says "accessible through the PRBS pattern testing control and status (", but register 1.307 is called the Test pattern ability register.

SuggestedRemedy

Change "accessible through the PRBS pattern testing control and status (" to "accessible through the Test pattern ability register ("
Note: there is another comment proposing to change the "register" in the brackets to "bit".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.5.10** *P* **213** *L* **11** # 743

Barrass, Hugh Cisco Systems, Inc.

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

Change register addresses according to HB_12

SuggestedRemedy

Change register addresses (currently 1.307) to 1.1500 - 7 instances. Also in Table 83-3, p.216

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change 7 instances on page 213 of 1.307 to 1.1500.

Change 1 instance on page 214 of 1.307 to 1.1500 (note also that bit 15 should have been bit 12 for this instance per comment 484)

Change 8 instances on page 216 of 1.307 to 1.1500.

Cl **83** *SC* **83.5.10** *P* **213** *L* **22** # 482

Anslow, Peter Nortel Networks

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

The variables "PRBS_TX_gen_enable", "PRBS_RX_gen_enable", "PRBS_TX_check_enable", "PRBS_RX_check_enable" used on pages 213 and 214 (12 instances total) do not match the variable names in Table 83-2 which are "TX_PRBS_gen_enable" etc.

SuggestedRemedy

Since the variables used elsewhere in the clause are "PRBS_TX_" etc. change the 4 variables in Table 83-2 to match those used in the text. Also, on Page 213 lines 28, 37 and 46 the last underscore is missing from the variable names.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.5.10** *P* **213** *L* **24** # 288

Dawe, Piers J G Independant

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

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

SuggestedRemedy

Change
"To avoid correlated crosstalk, it is highly recommended that the PRBS31 patterns generated on each lane be generated from independent, random seeds or at a minimum offset of 20 000 UI between the PRBS31 sequence on any lane and any other lane."
to
"To avoid correlated crosstalk, it is highly recommended that the chance that the offset between the PRBS31 sequence on any lane and any other lane is less than 20 000 UI is zero, or no greater than would be the case if the PRBS31 patterns generated on each lane were generated from independent, random seeds."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The current text is clear and simple, and no developer would interpret "random seeds" as compelling an implementation which selects seeds based on a process of chance. The proposed remedy would make the text more difficult to parse and understand.

Cl **83** *SC* **83.5.10** *P* **213** *L* **29** # 745

Barrass, Hugh Cisco Systems, Inc.

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

Change register addresses according to HB_14

SuggestedRemedy

Change register addresses (currently 1.309) to 1.1502 - 12 instances. Also in Table 83-2, p.215

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.5.10** *P* **213** *L* **41** # 289

Dawe, Piers J G Independant

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

Draft provides PRBS31 testing options that are preferred to scrambled idle testing or BIP counting Ethernet-encoded signal for several reasons, e.g. provides controlled overstress, factories have the PRBS31-aware BERTs already. Need to run the SAME (factory-compatible) pattern in complete hosts to assure signal integrity in situ. Desirable to count errors in test equipment and host, not just take module's word for it. To support multi-lane PRBS31 properly in a variety of scenarios, should generate per physical lane and check per PCS lane.

SuggestedRemedy

In the paragraphs beginning line 40 and top of page 214, change "lane" or "lanes" to "PCS lane" or PCS lanes". Change "Ln9_PRBS_TX_test_err_counter count" to "Ln19_PRBS_TX_test_err_counter count" and "Ln9_PRBS_RX_test_err_counter count" to "Ln19_PRBS_RX_test_err_counter count".
Delete "Note that bit multiplexing of per-lane PRBS31 may produce a signal which is not meaningful for downstream sublayers."
Provide 20 PRBS31 error counters in each direction, one per PCS lane.
Add informative NOTE explaining that a 10G, 20G or 40G PRBS31 contains PCS lanes with PRBS31s with much more than 20,000 UI offset.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

With the relaxed text for PRBS31 error checking which only requires counting of one error in a 1000-bit sliding window, there is nothing to preclude an implementation which checks the PRBS31 pattern using parallel checkers, whether at the granularity of a PCS lane or any other convenient divisor. However, keeping the error counts on a PCS lane basis rather than a physical lane basis hampers the usefulness of the test as there is no fixed association of PCS lanes to physical lanes at a given PMA input or output, so one would lose the visibility of which lane was experiencing errors. Confusion may also be introduced by calling these PCS lanes, as there are no lane markers in the PRBS31 pattern to identify which PCS lane is which. So unlike any other part of the text where a PCS lane is identified by a unique lane marker telling you which PCS lane it is, these would not really be PCS lanes, but 20 arbitrary bins at the bit rate of a PCS lane uncorrelated with the physical lanes.

Cl **83** *SC* **83.5.10** *P* **213** *L* **49** # 746

Barrass, Hugh Cisco Systems, Inc.

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

Change register addresses according to HB_15

SuggestedRemedy

Change register addresses (currently 1.310 -319) to 1.1600-1609. Also in Table 83-4, p.216

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.5.10** *P* **214** *L* **36** # 484

Anslow, Peter Nortel Networks

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

Register 1.307 is the "Test pattern ability" register. Also, the "Square wave test ability" bit is 1.307.12

SuggestedRemedy

Change "is accessible through the square wave testing pattern ability register 1.307.15" to "is accessible through the Test pattern ability register, bit 1.307.12" or to "is accessible through the Square wave test ability bit 1.307.12"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change
"is accessible through the square wave testing pattern ability register 1.307.15"
to:
"is accessible through the Square wave test ability bit 1.307.12"

Per comment 743, register 1.307 changes to 1.1500.

Cl **83** *SC* **83.5.10** *P* **214** *L* **38** # 485

Anslow, Peter Nortel Networks

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

This says "are accessible through square wave testing control register" but the register name is "square wave testing control and status" register in the body of 45.2.1.96 and title of Table 45--65b

SuggestedRemedy

Change to "are accessible through the square wave testing control and status register"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Note - reconcile with any register name/number change from Hugh

Cl **83** *SC* **83.5.10** *P* **214** *L* **39** # 744

Barrass, Hugh Cisco Systems, Inc.

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

Change register addresses according to HB_13

SuggestedRemedy

Change register addresses (currently 1.308) to 1.1501 - 2 instances. Also in Table 83-2, p.215

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.5.10** *P* **214** *L* **42** # 486

Anslow, Peter Nortel Networks

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

This says "Lanes for which square wave is not enabled will transmit normal data resulting from the bit multiplexing operations described in 83.5.2." But in testing, we want to be able to have scrambled idles or PRBS31 on the other lanes. Also, "when transmit square wave test pattern is disabled for all lanes", the behaviour is determined by other registers (may be PRBS31 or PRBS9) and may not be "normal operation performing bit multiplexing as described in 83.5.2" Similar comment submitted against 45.2.1.96

SuggestedRemedy

Change the last two sentences to "Lanes for which square wave is not enabled will transmit normal data resulting from the bit multiplexing operations described in 83.5.2 or test patterns as determined by other registers. When transmit square wave test pattern is disabled for all lanes, the PMA will perform normal operation performing bit multiplexing as described in 83.5.2 or transmit test patterns as determined by other registers."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.5.10** *P* **214** *L* **6** # 483

Anslow, Peter Nortel Networks

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

"The RX test pattern error counters Ln0_PRBS_RX_test_err_counter through Ln9_PRBS_RX_test_error_counter in count, per lane, errors in detecting ..." has a spurious "in" after "Ln9_PRBS_RX_test_error_counter"

SuggestedRemedy

Delete "in"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.5.10** *P* **214** *L* **8** # 747

Barrass, Hugh Cisco Systems, Inc.

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

Change register addresses according to HB_16

SuggestedRemedy

Change register addresses (currently 1.320 -219) to 1.1700-1709. Also in Table 83-4, p.217

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Current register addresses to be changed are 1.320-329 (not 219)

Cl **83** *SC* **83.5.10** *P* **29** *L* **214** # 155

Hajduczenia, Marek ZTE Corp.

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

Note that PRBS9 is intended to be checked by external test gear, and no PRBS9 checking is provided within the PMA.change to "Note that PRBS9 is intended to be checked by an external test gear, and no PRBS9 checking function is provided within the PMA."

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change:
"Note that PRBS9 is intended to be checked by external test gear, and no PRBS9 checking is provided within the PMA."
to
"Note that PRBS9 is intended to be checked by external test gear, and no PRBS9 checking function is provided within the PMA."

note that the actual change is page 214 line 29.

Cl **83** *SC* **83.5.2** *P* **208** *L* **17** # 475

Anslow, Peter Nortel Networks

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

Space missing in "output lanes.If bit"

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.5.2** *P* **209** *L* **25** # 95

Braun, Ralf-Peter Deutsche Telekom AG

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

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

SuggestedRemedy

Change the value from 4.3 to 4.5.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See suggested remedy and response to comment #476

Cl **83** *SC* **83.5.2** *P* **209** *L* **26** # 476

Anslow, Peter Nortel Networks

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

In Figure 83-6, the second output lane from the left contains bits 4.1, 4.2, and 4.3, but the preceding stages have bits 4.3, 4.4 and 4.5

SuggestedRemedy

In Figure 83-6, in the second output lane from the left change 4.1, 4.2, and 4.3, to 4.3, 4.4 and 4.5 respectively.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.5.2** *P* **209** *L* **34** # 96

Braun, Ralf-Peter Deutsche Telekom AG

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

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

SuggestedRemedy

Change the value from 4.2 to 4.4.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See suggested remedy and response to comment #476

Cl **83** *SC* **83.5.2** *P* **209** *L* **42** # 97

Braun, Ralf-Peter Deutsche Telekom AG

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

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

SuggestedRemedy

Change the value from 4.1 to 4.3.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See suggested remedy and response to comment #476

Cl **83** *SC* **83.5.2** *P* **209** *L* **51** # 98

Braun, Ralf-Peter Deutsche Telekom AG

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

There is a typo: "Onput"

SuggestedRemedy

Change to "Output".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.5.3.3** *P* **210** *L* **31** # 624

Dambrosia, John Force 10 Networks Inc

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

This statement - "If there is a physically instantiated XLAUI/CAUI as well, then this requirement is contingent on no more than 29 ns of Skew, and no more than 200 ps of Skew ariation between lanes at SP1 (i.e., the PMA between SP1 and SP2 if both are at physically instantiated interfaces shall add no more than 14ns of Skew or 200 ps of Skew Variation in the transmit direction)." has no corresponding PIC.

SuggestedRemedy

Add appropriate pic

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add a new PIC in 83.7.4 below S4, numbered S5, renumbering existing S5-S9 as S6-S10.

Existing S4 status becomes "SP2SP5 and not USP1SP6:M"

S5 is defined as:
Feature: Additional Skew contribution toward SP2 in TX direction
Subclause: 83.5.3.3
Value/Comment: Add <=14ns of Skew and <=200ps of Skew Variation
Status: SP2SP5 and USP1SP6:M
Support: Yes[ ] No[ ]

Cl **83** *SC* **83.5.4** *P* **211** *L* **21** # 477

Anslow, Peter Nortel Networks

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

The Maximum (ns) values in Table 80-3 should match the values in Table 83-1

SuggestedRemedy

Since the exact values are fairly simple, change" tilde 104" to "102.4" and change "tilde 92" to 92.16

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.5.4** *P* **211** *L* **21** # 280

Muller, Shimon Sun Microsystems

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Dup 477

Cl **83** *SC* **83.5.4** *P* **211** *L* **21** # 811

Bennett, Michael Lawrence Berkeley Na

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

Assuming the tildes in the Maximum (ns) means approximately, it seems impossible to "meet the values specified in Table 83-1".

SuggestedRemedy

remove the tildes and use maximum values in the Maximum (ns) column

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Dup 477

Cl **83** *SC* **83.5.6** *P* **212** *L* **2** # 478

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

Change "(XLPPI and CPPI), the physical instantiation of" to "(XLPPI and CPPI), an optional physical instantiation of "

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.5.7** *P* **212** *L* **11** # 479

Anslow, Peter Nortel Networks

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

"(where the interface to is physically instantiated)" doesn't make sense

SuggestedRemedy

Change to "(where the interface is physically instantiated)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Overtaken by events - awkward text removed by comment #290

Cl **83** *SC* **83.5.7** *P* **212** *L* **11** # 290

Dawe, Piers J G Independant

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The proposal can be accepted, deleting "(where the interface is physically instantiatiated)", but not for the reason given by the commentor.

It is a reasonable simplification of the text given that the sentence begins "Other inputs to the SIL MAY include ...", and the case where you would likely include CDR is for a physically instantiated interface.

It is extremely unlikely that you would have CDR if this interface is buried inside of a chip - it is simpler to multiply or divide the clock recovered at the edge of the chip as necessary.

Cl **83** *SC* **83.5.8** *P* **212** *L* **28** # 480

Anslow, Peter Nortel Networks

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

This says "is accessible through register 1.8.0". But 1.8.0 is a bit, not a register.

SuggestedRemedy

Change to "is accessible through bit 1.8.0". Also change "(register 1.0.0, see 45.2.1.1.4)." to "(bit 1.0.0, see 45.2.1.1.4)." on line 31. Make equivalent changes on lines 47 and 50 and also page 213 line 10.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.6** *P* **215** *L* **14** # 488

Anslow, Peter Nortel Networks

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

The column for "PMA/PMD register name" in Table 83-2 does not contain the register names.

SuggestedRemedy

Replace with "PMA/PMD control 1" for register 1.0, "PRBS pattern testing control" for 1.309 and "Square wave testing control" for 1.308.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.6** *P* **215** *L* **21** # 489

Anslow, Peter Nortel Networks

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

Table 83-2. In the column for "MDIO status variable" TX etc. and RX etc. don't match the names in clause 45 and these are primarily control variables.

SuggestedRemedy

Change TX to Tx (2 places), change RX to Rx (2 places) and change the column heading to "MDIO variable" (or MDIO control variable)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change the entry in the column heading of Table 83-2 from "MDIO status variable" to "MDIO variable"
Change TX to Tx and RX to Rx throughout clauses 83 and 85.

Note that the original change to TX RX had been an unintended consequence of implementing comment #285 of D2.1.

Cl **83** *SC* **83.6** *P* **215** *L* **5** # 487

Anslow, Peter Nortel Networks

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

Tables 83-2 and 83-3 are explained here but Table 83-4 is not

SuggestedRemedy

Add "Mapping of MDIO counter to PMA counters is shown in Table 83--4."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.6** *P* **216** *L* **16** # 490

Anslow, Peter Nortel Networks

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

Table 83-3. In the column for "MDIO status variable" TX etc. and RX etc. don't match the names in clause 45.

SuggestedRemedy

Change TX to Tx (2 places) and change RX to Rx (2 places).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See #489

Cl **83** *SC* **83.6** *P* **216** *L* **32** # 491

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.6** *P* **26** *L* **214** # 154

Hajduczenia, Marek ZTE Corp.

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

Table 83-4 is cut on page 216

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Dup #230

Cl **83** *SC* **83.7** *P* **218** *L* **2** # 492

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Comment #164 changes the title of clause 83 from "40GBASE-R, 100GBASE-R" to "40GBASE-R and 100GBASE-R", so the title on line 2 now matches.

On line 6 change "PMA Interface sublayer, 40GBASE-R and 100GBASE-R," to "Physical Medium Attachment (PMA) sublayer, type 40GBASER and 100GBASE-R"

Cl **83** *SC* **83.7.3** *P* **219** *L* **36** # 495

Anslow, Peter Nortel Networks

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

The skew requirements are in 83.5.3 not 83.5.2

SuggestedRemedy

Change subclause to 83.5.3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Overtaken by events. This particular line in the PICS is deleted by comment #623.

Cl **83** *SC* **83.7.3** *P* **219** *L* **36** # 623

Dambrosia, John Force 10 Networks Inc

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

For subclauses 83.5.2, items SKEW, USP1SP, DSP1SP6, SPS2P5 do not have corresponding SHALL statements in referenced subclause.

SuggestedRemedy

These PIC all seem related to SKEW, and therefore the subclause reference should be changed to appropriate subclauses in 83.5.3.x.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Remove the PICS line SKEW, as this would just be the aggregate of PICS S1 through S9 in 83.7.4.

The entries USP1SP6, DSP1SP6, SP2SP5 are all included in the PICS table for the purpose of recording adjacent physically instantiated interfaces are present rather than to confirm compliance with a particular requirement. Consequently it is not appropriate to have a "shall" statement in the text for these items. However, the subclause reference for these items is incorrect. Change the subclause reference for USP1SP6, DSP1SP6, SP2SP5 to 83.5.3.

Cl **83** *SC* **83.7.3** *P* **219** *L* **5** # 494

Anslow, Peter Nortel Networks

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

The references in the subclause column should be links, but they aren't for *PMA40, *PMA100, LANES_UPSTREAM, LANES_DOWNSTREAM and *DSP1SP6

SuggestedRemedy

Make them links

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.7.3** *P* **219** *L* **5** # 622

Dambrosia, John Force 10 Networks Inc

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

For subclauses 83.1.1 and 83.1.4 - Items PMA40, PMA100, LANES_UPSTREAM, LANES_DOWNSTREAM do not have corresponding SHALL statements in referenced subclauses

SuggestedRemedy

add corresponding pic statement

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The entries PMA40, PMA100, LANES_UPSTREAM, LANES_DOWNSTREAM are all included in the PICS table for the purpose of recording which options have been implemented rather than to confirm compliance with a particular requirement. Consequently it is not appropriate to have a "shall" statement in the text for these items.

Cl **83** *SC* **83.7.3** *P* **219** *L* **5** # 493

Anslow, Peter Nortel Networks

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

Both *PMA40 and *PMA100 are shown as optional, but one of the two must be present for this PICS to apply. Use the format of "O.1" as explained in 21.6.2: "O.<n> optional field/function, but at least one of the group of options labeled by the same numeral <n> is required".

SuggestedRemedy

Show them both as O:1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.7.3** *P* **220** *L* **24** # 496

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add a new PICS on page 220 below SP2SP5:
*PPI PMD service interface instantiated as nPPI O Yes[ ] No [ ]

Further down the table, change the name of PICS "PPI" to "PPIET" (for PPI electrical and timing). Change the status of this PICS from "SP2SP5:M" to "PPI:M"

SP2SP5 should remain as is since S4-S6 on the following page refer to it.

Cl **83** *SC* **83.7.4** *P* **221** *L* **5** # 497

Anslow, Peter Nortel Networks

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

Six places in the Value/Comment column use "<=" rather than the less than or equal to symbol

SuggestedRemedy

Replace "<=" with the less than or equal to symbol (Ctrl-q #)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83** *SC* **83.7.5** *P* **221** *L* **28** # 626

Dambrosia, John Force 10 Networks Inc

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

PIC statements for JTP1 and JTP2 have no corresponding SHALL statements

SuggestedRemedy

add appropriate SHALL statements to 83.5.10

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The entries JTP1 and JTP2 are all included in the PICS table for the purpose of recording which options have been implemented rather than to confirm compliance with a particular requirement. Consequently it is not appropriate to have a "shall" statement in the text for these items.

Cl **83A** *SC* **83A.1** *P* **14** *L* **376** # 142

Hajduczenia, Marek ZTE Corp.

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

item e)"Shared functionality with other 40 Gb/s or 100 Gb/s Ethernet blocks" - what are "Ethernet blocks" ???

SuggestedRemedy

Either clarify what that is or replace with something that has been defined already.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Remove e) "Shared functionality with other 40 Gb/s or 100 Gb/s Ethernet blocks"

Statement is not clear and intent is covered in d) "shared technology with other 40 Gb/s or 100Gb/s interfaces"

Cl **83A** *SC* **83A.1** *P* **375** *L* **52** # 313

Dawe, Piers J G Independant

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

We should not call part of the receiver a "transmitter" or part of the transmitter a "receiver", if we can avoid it.
According to 83.3, a PMA has TX and RX directions, each of which has an input and an output. nAUI is intended to connect PMAs, e.g. one in the host and one in a module. Therefore nAUI must connect a (host) TX (transmitter) output to a (module) transmitter input, and a (module) RX (receiver) output to a (host) receiver input. 83B used to use, and 86A uses, the terms host output, module input, module output, host input, according to resolution of D2.0 comment 470:
'ACCEPT IN PRINCIPLE. Need to avoid using "receive" or "receiver" on the transmit path (down the stack, PMA to MDI) or "transmit" or "transmitter" on the receive path (up the stack, MDI to PMA).
Change names using the terms host, module, input and output. For example, in the caption of Table 86-6 change "PPI electrical transmit signal output specifications at TP1a" to "nPPI host electrical output specifications at TP1a" '
This is compatible with 83 and the rest of 802.3ba except 83A and now 83B. But Figure 83A-2 shows two "Transmitter"s and two "Receiver"s, one for each direction. This isn't compatible terminology.
Note this problem does not arise in clauses 84 or 85.
Also compare Clause 47 (XAUI) which uses "driver" and "receiver" for the ports of the ICs.
The proposed remedies follow 86A for connector-related items and 47 for IC-related items.

SuggestedRemedy

Change "Transmitter" to "driver", "Transmit Compliance Point" to "driver compliance point", "transmit eye mask" and "Transmitter Eye Mask" to "driver eye mask" or just "eye mask", "transmit signal" to ""signal" or "output signal", "transmit jitter" to "driver jitter" throughout 83A. In Table 83A-2, delete "Receiver" before "eye mask", five times including table note. Consider changing "XLAUI/CAUI receiver" to "XLAUI/CAUI component receiver" where appropriate. Change "Figure 83A-2--Definition of transmit and receive test points" to "Figure 83A-2--Definition of test points".

Proposed Response *Response Status* **W**

PROPOSED REJECT.

XLAUI / CAUI Component Transmitter and Receiver is different from 83.3 "TX and Rx Directions" and is clearly shown in 83A-2.

See comment 328.

Cl **83A** *SC* **83A.1** *P* **375** *L* **52** # 314

Dawe, Piers J G Independant

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

I didn't notice any "functional requirements" in Annex 83B: coding, skew and such are in 83. 83B is electrical.

SuggestedRemedy

Delete "functional and".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy. Annex 83A/B are predominantly electrical specs

Cl **83A** *SC* **83A.1** *P* **376** *L* **2** # 573

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

Change the reference to "83A.4"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested Remedy

Cl **83A** *SC* **83A.2.1** *P* **15** *L* **277** # 109

Hajduczenia, Marek ZTE Corp.

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

Figure 83A-2 has the caption "Definition of transmit and receive test points", yet the figure presents compliance points. Is the "test point" and "complaince point" one and the same? If so, why use two different terms ?

SuggestedRemedy

Per comment, clarify whether "test point" and "complaince point" is one and the same or not.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Rename figure "Figure 83A-2 - Definition of transmit and receive compliance points"

Cl **83A** *SC* **83A.2.1** *P* **377** *L* **23** # 368

Ganga, Ilango Intel Corporation

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

[Editor's note: Comment 5 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
The frequency range for insertion loss in 83A & 83B is from 0.25 GHz to 11.1 GHz, while for 85 it's from 0.05 GHz to 11.1 GHz and for 86A it's from 0.01 GHz to 11.1 GHz. Unless there are good technical reasons for the differences in the low frequency range limit, these should be consistent. Since scrambled data has significant low frequency content, it seems prudent to set the insertion loss frequency range limit to the lowest practical point to guard against unexpected loss of low frequency content.

SuggestedRemedy

For equations 85-14, 83A-1, 83A-2, 83A-9, 83B-1, 83B-2, 83B-3, 83B-4, 86A -4, 86A-5, 86A-6, 86A-7, 86A-15 & 86A-16 change the lower limit of the frequency range to 0.01 GHz.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change equations 83A-1, 83A-2, 83A-9, 83B-1, 83B-2, 83B-3, 83B-4 lower frequency range to 0.01 GHz.

Cl **83A** *SC* **83A.2.1** *P* **377** *L* **48** # 315

Dawe, Piers J G Independant

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Figures were re-sized going to D3.0, but additional reformatting of figures 83A-3, 83A-4, 83A-14 may be beneficial

Cl **83A** *SC* **83A.2.1** *P* **377** *L* **50** # 574

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83A** *SC* **83A.2.2** *P* **378** *L* **2** # 575

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83A** *SC* **83A.3.3** *P* **379** *L* **12** # 576

Anslow, Peter Nortel Networks

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

This is the only instance of the spelling "signalling" in the draft (79 instances of "signaling")

SuggestedRemedy

Change to "signaling"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83A** *SC* **83A.3.3** *P* **379** *L* **18** # 577

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested rememdy.

Replace "83A.3.3" in Signaling rate per lane (range) row of Table 83A-1 with "-".

Replace "83A.3.3" in Signaling rate per lane (range) row of Table 83A-2 with "-".

Cl **83A** *SC* **83A.3.3** *P* **379** *L* **23** # 316

Dawe, Piers J G Independant

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

Too many gratuitous capitals. This is an ER comment because we are unlikely to catch them all in one cycle.

SuggestedRemedy

Scrub the draft, all clauses and annexes.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Additional guidance needed, but changing the following:

Table 83A-1:
"Maximum Differential Output Voltage, peak-to-peak" to "Maximum differential output voltage, peak-to-peak"
"Minimum De-emphasis" to "Minimum de-emphasis"
"Maximum De-emphasis" to "Maximum de-emphasis"
"Maximum Termination Mismatch at 1MHz" to "Maximum termination mismatch at 1MHz"
"Maximum Output AC Common Mode Voltage, RMS" to "Maximum output AC common mode voltage, RMS"
"Minimum Output Rise and Fall time (20% to 80%)" to "Minimum output rise and fall time (20% to 80%)"
"Maximum Total Jitter" to "Maximum total jitter"
"Maximum Deterministic Jitter" to "Maximum deterministic jitter"
"bTotal jitter measurement methodology defined in 83A.5"
"cDeterministic jitter measurement methodology defined in 83A.5"
"d Transmitter eye mask illustrated in Figure 83A-8"

Table 83A-2
"Maximum Input AC Common Mode Voltage, RMS" to "Maximum input AC common mode voltage, RMS"
"Minimum Input Rise and Fall Time (20% to 80%)" to "Minimum input rise and fall time (20% to 80%)"
"Minimum deterministic input jitter tolerance"

Table 83B-2
"Minimum Module differential input
return loss" to "Minimum module differential input return loss"

Table 83B-3
"Minimum De-emphasis" to "Minimum de-emphasis"
"Maximum De-emphasis" to "Maximum de-emphasis"
"Maximum Termination Mismatch at 1 MHz" to "Maximum termination mismatch at 1 MHz"
"Maximum Total Jitter" to "Maximum total jitter"
"Maximum Deterministic Jitter" to "Maximum deterministic jitter"

Table 83B-5
"Maximum Total Jitter" to "Maximum total jitter"
"Maximum Deterministic Jitter" to "Maximum deterministic jitter"

Cl **83A** *SC* **83A.3.3** *P* **379** *L* **46** # 369

Ganga, Ilango Intel Corporation

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83A** *SC* **83A.3.3** *P* **47** *L* **378** # 110

Hajduczenia, Marek ZTE Corp.

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

Missing comma after "between components"

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Note: This is in section 83A.3.1 page 378, line 47

Comma should not be necessary

Cl **83A** *SC* **83A.3.3.1** *P* **379** *L* **29** # 578

Anslow, Peter Nortel Networks

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

"1MHz" should be "1 MHz"

SuggestedRemedy

Change "1MHz" to "1 MHz"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83A** *SC* **83A.3.3.1** *P* **379** *L* **49** # 579

Anslow, Peter Nortel Networks

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

Comment 6 against D 2.3 was agreed to be re-submitted by the Editor against D 3.0. The directed proposed response was "accept" which would delete note a. A similar situation exists with note d which is not needed now that subclause 83A.3.3.5 is referenced. Also for other tables.

SuggestedRemedy

Delete note d from Table 83A-1, notes a and c from Table 83A-2, note c from Table 83B-3 (including "d"s from other lines), note b from Table 83B-5 (including "c"s from other lines)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

It would appear notes are redundent due to reference to sections. This applies to:
Table 83A-1
notes a, b, c, d
Table 83A-2
notes a, b, c
Table 83B-3
notes a,b,c
Table 83B-5
notes a, b

Cl **83A** *SC* **83A.3.3.1** *P* **380** *L* **14** # 370

Ganga, Ilango Intel Corporation

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change to:
"See Figure 83A-5 for an illustration of absolute driver output voltage limits, definition of differential peak to peak
amplitude, and definition of the parameters used to calculate de-emphasis. SLi<P> and SLi<N> are the positive and negative sides of the differential signal pair for lane i (i = 0, 1, 2, 3 for XLAUI. For CAUI i = 0:9)."
Remove the sentence in square brackets from Figure 83A-5.

see comment 317

Cl **83A** *SC* **83A.3.3.1** *P* **380** *L* **15** # 318

Dawe, Piers J G Independant

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

De-emphasis means a relative attenuation of the higher frequencies, as in "Dolby noise reduction is a form of dynamic preemphasis employed during recording, plus a form of dynamic deemphasis used during playback". Or according to the ANSI standard "ATIS Telecom Glossary 2007", deemphasis is "In FM transmission, the process of restoring (after detection) the amplitude-vs.-frequency characteristics of the signal." So de-emphasis is the opposite of what's happening here, which is
"preemphasis
A system process designed to increase, within a band of frequencies, the magnitude of some (usually higher) frequencies with respect to the magnitude of other (usually lower) frequencies, in order to improve the overall signal-to-noise ratio by minimizing the adverse effects of such phenomena as attenuation differences, or saturation of recording media, in subsequent parts of the system. Note: Preemphasis has applications, for example, in audio recording and FM transmission.".
An implementation might achieve emphasis by a subtractive method, and the implementer might call his method what he wants. However, that's implementation. Viewed from the outside, pre-emphasis is a relative boosting of the higher frequencies and de-emphasis is its opposite.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83A** *SC* **83A.3.3.1** *P* **380** *L* **21** # 319

Dawe, Piers J G Independant

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

At line 10, replace "Amplitude measurements are taken using an average of at least 16 waveforms and taken at the center of the respective UI using a square wave test pattern as defined in 83.5.10."
with either:
"Differential peak-to-peak amplitude is measured by an averaging the central 20% of the first unit interval following a transition in the square wave test pattern defined in 83.5.10. VMA is defined in 86A.5.3.5."

Replace Vtx-demph with VMA in table 83A-1, equation 83A-3, equation 83A-4, figure 85A-

5, table 83B-3, equation 83B-7

Cl **83A** *SC* **83A.3.3.1** *P* **380** *L* **25** # 848

Dudek, Michael QLogic Corporation

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

This is actually in 83A. "x is max rise/fall time in ps" is not explicit. (I don't know what it means!!)

SuggestedRemedy

With one potential meaning change to "x is the rise or fall time in ps whichever is larger"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

change to "x is the rise or fall time (whichever is larger) in ps"

See comment 854

[Editor's note: This comment is against 83A.3.3.1, hence corrected clause/subclause number fields to 83A]

Cl **83A** *SC* **83A.3.3.1** *P* **380** *L* **46** # 317

Dawe, Piers J G Independant

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

Should not put whole sentences in figures, especially if normative - even if Figure 47-3 did. Should use regular text.

SuggestedRemedy

Move the sentence in square brackets from Figure 83A-5 to line 15.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy. See comment 370

Cl **83A** *SC* **83A.3.3.1** *P* **380** *L* **5** # 580

Anslow, Peter Nortel Networks

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

The text "Single-ended output voltage range shall be between the range specified in Table 83A--1 with respect to ground." is not very clear.

SuggestedRemedy

Change to "The single-ended output voltage shall be within the range specified in Table 83A--1 with respect to ground."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83A** *SC* **83A.3.3.4** *P* **382** *L* **3** # 371

Ganga, Ilango Intel Corporation

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83A** *SC* **83A.3.3.4** *P* **382** *L* **5** # 581

Anslow, Peter Nortel Networks

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

"include" should be "includes"

SuggestedRemedy

Change "include" to "includes". Make the same change on Page 384 line 40 and Page 385 line 30

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83A** *SC* **83A.3.3.5** *P* **382** *L* **48** # 582

Anslow, Peter Nortel Networks

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

There is only one template for this.

SuggestedRemedy

Change "templates" to "template"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83A** *SC* **83A.3.4** *P* **383** *L* **35** # 583

Anslow, Peter Nortel Networks

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

A receiver does not have an "Input AC Common Mode Voltage" or an "Input Rise and Fall Time". These are characteristics of an applied signal.

SuggestedRemedy

Change to "Input AC Common Mode Voltage tolerance" and "Input Rise and Fall Time tolerance".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to "Minimum input AC common mode voltage tolerance, RMS" and

"Minimum input rise and fall time tolerance"

Cl **83A** *SC* **83A.3.4** *P* **383** *L* **36** # 849

Dudek, Michael QLogic Corporation

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

This is actually 83A Ac common mode voltage and input rise and fall times are not characteristics of the receiver they are properties of the signal that the receiver must tolerate.

SuggestedRemedy

Add "tolerance" to the parameters AC common mode voltage and input rise and fall time"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment 583

[Editor's note: This comment is against 83A.3.4, hence corrected clause/subclause number fields to 83A]

Cl **83A** *SC* **83A.3.4.2** *P* **384** *L* **11** # 320

Dawe, Piers J G Independant

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

Draft says "the far-end receiver eye mask" yet no other mention of far-end eye.

SuggestedRemedy

Change to "the eye mask".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83A** *SC* **83A.3.4.3** *P* **384** *L* **37** # 372

Ganga, Ilango Intel Corporation

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83A** *SC* **83A.3.4.4** *P* **385** *L* **24** # 799

Ghiasi, Ali Broadcom

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

Log scale hide the critical high freq attributes

SuggestedRemedy

Change to linear scale

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change plots 83A-6, 83A-7, 83A-10, 83A-11, 83A-14, 83B-8, 83B-9 to linear scale

Cl **83A** *SC* **83A.3.4.4** *P* **385** *L* **27** # 321

Dawe, Piers J G Independant

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

Circular references, pointless equation and graph.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED REJECT.

For consistancy with other return loss specifications, it would be best to represent the differential to common mode input return loss as an equation with a graph, and reference that equation in Table 83A-2 (even if it is a fixed value)

Cl **83A** *SC* **83A.3.4.4** *P* **385** *L* **39** # 879

Petrilla, John Avago Technologies

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

The last line of the paragraph, "f is the frequency in GHz." is redundant with the first line of the paragraph and can be deleted.

SuggestedRemedy

Delete the last line of the paragraph, "f is the frequency in GHz".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Delete "For frequencies from 10 MHz to 11.1 GHz," from the first line of the paragraph

Add frequency bound to the equation:

0.01 = f = 11.1

Cl **83A** *SC* **83A.3.4.5** *P* **386** *L* **26** # 322

Dawe, Piers J G Independant

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

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

SuggestedRemedy

Change to AC coupling, three times here, once in 83A.3.1, about 7 times in 85

Proposed Response *Response Status* **W**

PROPOSED REJECT.

AC-coupling is used in 802.3ap

Cl **83A** *SC* **83A.3.4.5** *P* **386** *L* **28** # 880

Petrilla, John Avago Technologies

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

The declaration that 'AC-coupling is part of the receiver' can lead to AC-coupling means included on both ends of the XLAUI/CAUI link when an 83A receiver is connected to an 83B module since 83B.2.1 requires AC-coupling in modules for both Tx and Rx paths. AC-coupling on both ends of the link seems to have little utility and may likely degrade signal performance. The solution to this problem is better addressed in 83A than 83B since the host designer knows which 83A interfaces are not connected to 83B modules

SuggestedRemedy

Change "AC-coupling is considered to be part of the receiver for the purposes of this specification unless explicitly stated otherwise." to "AC-coupling is considered part of the receiver for the purposes of this specification except when interfacing with modules defined in 83B or explicitly stated otherwise."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83A** *SC* **83A.3.4.6** *P* **386** *L* **38** # 323

Dawe, Piers J G Independant

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

The low frequency jitter tolerance is the same for a receive side input as for a transmit side input, so there is no margin for the small amount of extra LF jitter added by CDRs in the link (e.g. in a module). We also have to check that the nAUI LF jitter specs are compatible with the PMDs, both 10G-lane and 25G-lane. Here is one proposed remedy; there may be alternatives.

SuggestedRemedy

Change the corner frequency for a nAUI interface on the transmit side (towards the line) from 4 MHz to 2 MHz. Also in 83B.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

PMD jitter requirements are verified at the PMD level. Jitter tolerance for PMDs are also defined in PMD sections.

Cl **83A** *SC* **83A.4** *P* **387** *L* **23** # 850

Dudek, Michael QLogic Corporation

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

This is actually 83A . Poor English

SuggestedRemedy

Change "an Xlaui" to "a Xlaui"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

[Editor's note: This comment is against 83A.4, hence corrected clause/subclause number fields to 83A]

Cl **83A** *SC* **83A.4** *P* **388** *L* **31** # 800

Ghiasi, Ali Broadcom

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

Log scale hide the critical high freq attributes

SuggestedRemedy

Change to linear scale

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See comment 799

Cl **83A** *SC* **83A.5** *P* **389** *L* **4** # 324

Dawe, Piers J G Independant

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

0 Volts -3dB

SuggestedRemedy

0 V (I think: as on line 14) -3 space dB

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy:
replace "0 Volts" with "0 V"
replace "-3dB" with "-3 dB"

Cl **83A** *SC* **83A.5.1** *P* **389** *L* **12** # 374

Ganga, Ilango Intel Corporation

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve comment to ensure consistancy between 83A and 83B
83A.5:
Change from, "The data pattern for jitter measurements shall be test pattern PRBS31."
To:
"The data pattern for jitter measurements shall be test pattern PRBS31 (see 83.5.10) or scrambled idle (see 82.2.10)."
Change from, "A PRBS31 pattern shall be used for evaluating XLAUI/CAUI jitter tolerance."
to
A PRBS31 pattern (see 83.5.10) or scrambled idle (see 82.2.10) shall be used for evaluating XLAUI/CAUI jitter tolerance.
Add PICS for Jitter Tolerance Pattern
83B.2.3 already has the following:
The recommended pattern for evaluating XLAUI/CAUI jitter tolerance is scrambled idle, (see 82.2.10) or PRBS31 (see 83.5.10).

Cl **83A** *SC* **83A.5.1** *P* **389** *L* **13** # 325

Dawe, Piers J G Independant

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

"The data pattern": if it's a test pattern it's not data. (Ethernet frames are data, idle is not.)

SuggestedRemedy

Delete "data".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83A** *SC* **83A.5.1** *P* **389** *L* **15** # 765

Misek, Brian Avago Technologies

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

Not clear that "off" state can have de-emphasis.

SuggestedRemedy

Change "is the optimal setting" to "is defined any setting that gives optimal performance"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83A** *SC* **83A.5.1** *P* **389** *L* **16** # 373

Ganga, Ilango Intel Corporation

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

see comment 881

Cl **83A** *SC* **83A.5.1** *P* **389** *L* **16** # 881

Petrilla, John Avago Technologies

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

The last sentence of the paragraph, "All XLAUI/CAUI channels shall be active during transmit jitter testing to ensure any channel-channel crosstalk is included in the jitter evaluation." uses the word 'channel' where the word 'lane' would seem a better choice.

SuggestedRemedy

Change "All XLAUI/CAUI channels shall be active during transmit jitter testing to ensure any channel-channel crosstalk is included in the jitter evaluation." to "All XLAUI/CAUI lanes shall be active during transmit jitter testing to ensure any lane-lane crosstalk is included in the jitter evaluation."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83A** *SC* **83A.5.1** *P* **389** *L* **36** # 327

Dawe, Piers J G Independant

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

As we are going to allow scrambled idles as well as PRBS31,

SuggestedRemedy

Remove "PRBS31" from Figure 83A-15 and Figure 83B-10. Update PICS 83A.7.6 EM1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Remove "PRBS31" from Figure 83A-15, 83B-10

Update PICS 83A.7.6 EM1 value to read PRBS31 or scrambled idle

Cl **83A** *SC* **83A.5.2** *P* **389** *L* **24** # 326

Dawe, Piers J G Independant

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

If by "peak-to-peak deterministic jitter" you mean dual-Dirac Deterministic Jitter, it definitely isn't peak-to-peak, it's related to intercept points that have nothing to do with peaks. And if not, what do you mean?

SuggestedRemedy

Either change "peak-to-peak deterministic jitter" to "dual-Dirac Deterministic Jitter" (with capitals) twice here, three times in 83B.5.5, or, better, use a more meaningful jitter metric.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add statement after the first sentence:
"Applied jitter is measured using the methodology described in Annex 48B.3"

Peak-to-peak deterministic jitter is used in ap (CL72), 47, 85.

Cl **83A** *SC* **83A.5.2** *P* **389** *L* **24** # 2

Gustlin, Mark Cisco Systems, Inc.

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: "The low pass filter stress is added until the 0.25 UI peak-to-peak deterministic jitter is achieved."
To: "The low pass filter stress is added until 0.34 UI peak-to-peak deterministic jitter is achieved."

Cl **83A** *SC* **83A.5.2** *P* **389** *L* **29** # 882

Petrilla, John Avago Technologies

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

There should not be any inferences that test setups and block diagrams are compulsory.

SuggestedRemedy

Change "Figure 83A--15 depicts the XLAUI/CAUI Jitter Tolerance test setup." to "Figure 83A--15 depicts a XLAUI/CAUI Jitter Tolerance test setup."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See proposed remedy

Cl **83A** *SC* **83A.5.2** *P* **389** *L* **30** # 375

Ganga, Ilango Intel Corporation

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

[Editor's note: Comment 3 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
Please spell out +.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **83A** *SC* **83A.5.2** *P* **389** *L* **38** # 795

Ghiasi, Ali Broadcom

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

No clear what PCB trace stress means is this electrical or mechanical stress or do I need to twist the PCB!

SuggestedRemedy

Replace with "Frequency dependent attenuator *"
* PCB traces are example of Frequency dependent attenuator

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace "...function, and PCB trace stress."
with
"...function, and frequency dependent attenuation stress".

Replance "Stress is then added using PCB
trace or frequency dependent attenuation which emulates PCB loss"
with
"Frequency dependent attenuation stress is then added using PCB trace or frequency dependent attenuation which emulates PCB loss"

See comment 796

Cl **83A** *SC* **83A.7.2.2** *P* **40** *L* **391** # 111

Hajduczenia, Marek ZTE Corp.

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

(1) "IEEE 802.3 Std. 802.3ba-20xx Annex83A" should read "IEEE 802.3 Std. 802.3ba, Annex83A" - scrub the draft to make this designation consistent across various clauses(2) There is nothing like "IEEE Std 802.3-2007" - this must be changed to "IEEE Std 802.3-2008" - scrub the draft to make this designation consistent across various clauses

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to:
IEEE Std 802.3ba-20xx

See comment 393

Cl **83A** *SC* **83A.7.3** *P* **392** *L* **4** # 242

Turner, Edward J Gnodal Limited

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

Table line thickness and style of PICS table is not same as in other clauses.

SuggestedRemedy

Use thicker lines for the table border and around the title cells and thin lines between cells, as per tables in the other clauses. Also apply to other PICS tables in 83A.7

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

[Editor's note: This comment is against 83A.7.3, hence corrected clause/subclause number fields to 83A]

Cl **83A** *SC* **83A.7.3** *P* **392** *L* **5** # 584

Anslow, Peter Nortel Networks

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

Annex 83A contains no requirements for Skew or Skew Variation, so Item "NOL" should not mention skew.
There should be requirements for Skew and Skew variation for SP1 if this is the lowest XLAUI/CAUI and SP6 if this is the highest.

SuggestedRemedy

Delete "Total and dynamic generation within limits, maximum Dynamic-Skew can be tolerated". Add a skew requirements subclause that just points to clause 83 for the skew requirements.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Section 83A.1.2 (which is the sub clause referenced) points to clause 83.

Replace "Total and dynamic generation within limits, maximum Dynamic-Skew can be tolerated"
with
"see Clause 83"

Cl **83A** *SC* **83A.7.3** *P* **9** *L* **392** # 112

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace "Leverages 64B/66B
coding"

with

"10.3125Gb/s (nominal)"

Remove N/A from support

Cl **83A** *SC* **83A.7.4** *P* **392** *L* **36** # 585

Anslow, Peter Nortel Networks

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

Item TC6 "Maximum Termination Mismatch" references subclause 83A.3.3.3 which is "Differential output return loss"

SuggestedRemedy

Change to "83A.3.3"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83A** *SC* **83A.7.4** *P* **392** *L* **4** # 679

Dambrosia, John Force 10 Networks Inc

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

No supporting SHALL statements for any PICS in 83A.7.3

SuggestedRemedy

add shall statements for NOL, RATE, IO, INT

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

NOL:
In 83A.1.2:
Change "For 40 Gb/s applications, the data stream is presented in four lanes as described in Clause 83. For 100 Gb/s
applications, it is presented in ten lanes as described in Clause 83"
to
"For 40 Gb/s applications, the data stream shall be presented in four lanes as described in Clause 83. For 100 Gb/s
applications, the data stream shall be presented in ten lanes as described in Clause 83"

RATE
In 83A.1.2 Change:
"The data is 64B/66B coded, resulting in a
nominal rate of 10.3125 Gb/s for each lane in both 40 Gb/s and 100 Gb/s applications."
to
"Data is 64B/66B coded. The nominal signalling rate for each lane in both 40 Gb/s and 100 Gb/s applications shall be 10.3125 Gb/s."

IO
In 83A.3
change: "The electrical characteristics for
XLAUI/CAUI are specified in this section."
to
"The electrical characteristics for
XLAUI/CAUI shall meet the specifications defined in this section."

INT
Remove (83A.4 is recommended)

Cl **83A** *SC* **83A.7.4** *P* **392** *L* **43** # 675

Dambrosia, John Force 10 Networks Inc

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

Features for TC8 is "Differential Output S-Parameters" which is not correct. The referenced equation is for Differential Output Return Loss

SuggestedRemedy

change feature to "Differential Output Return Loss

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
See comment 586

Cl **83A** *SC* **83A.7.4** *P* **392** *L* **43** # 586

Anslow, Peter Nortel Networks

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

Items TC8, TC9, RC3, RC4 contain "S-parameters" rather than return loss.

SuggestedRemedy

In items TC8, TC9, RC3 change "S-parameters" to "return loss" in RC4 change "Differential Common Mode Input Conversion S-parameters" to "Differential to common mode input return loss"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83A** *SC* **83A.7.4** *P* **392** *L* **46** # 676

Dambrosia, John Force 10 Networks Inc

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

Features for TC9 is "Common Modeb Output S-Parameters" which is not correct. The referenced equation is for Common Mode Output Return Loss

SuggestedRemedy

change feature to "Common Mode Output Return Loss"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
See comment 586

Cl **83A** *SC* **83A.7.5** *P* **393** *L* **10** # 677
Dambrosia, John Force 10 Networks Inc

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

Feature for RC3 is not correct - Differential Input S-Parameters. The referenced equation is for Differential Input Return Loss

SuggestedRemedy

Change feature to "Differential Input Return Loss"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
See comment 586

Cl **83A** *SC* **83A.7.5** *P* **393** *L* **13** # 678
Dambrosia, John Force 10 Networks Inc

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

Feature for RC4 is not correct - Differential Common Mode Input Conversion S-Parameters

SuggestedRemedy

change feature to "Differential to common mode input return loss"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
See comment 586

Cl **83A** *SC* **83A.7.5** *P* **393** *L* **8** # 587
Anslow, Peter Nortel Networks

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

This is the only instance of "1E-12" in the draft

SuggestedRemedy

Change to 10 superscript -12

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
See suggested remedy

Cl **83A** *SC* **83A.7.5** *P* **7** *L* **393** # 113
Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
See comment 587
[Editor's note: This comment is against 83A.7.5, hence corrected clause/subclause number fields to 83A]

Cl **83B** *SC* **83B.1** *P* **395** *L* **16** # 588
Anslow, Peter Nortel Networks

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

"applications which leverage XLAUI / CAUI" is not easy to understand.

SuggestedRemedy

Change to "applications which use the XLAUI / CAUI interface"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
See suggested remedy

Cl **83B** *SC* **83B.1** *P* **396** *L* **42** # 589
Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
See suggested remedy

Cl **83B** *SC* **83B.1** *P* **396** *L* **43** # 328

Dawe, Piers J G Independant

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

We should not call part of the receiver a "transmitter" or part of the transmitter a "receiver", if we can avoid it. Reason per another comment.
This proposed remedy, for 83B, follows 86A for connector-related items and 47 for IC-related items.
In addition, the specs in 83B don't relate to the XLAUI/CAUI component but to the host or module input or output.

SuggestedRemedy

In Figure 83B-3, change "Transmitter" to "Driver", twice, and once each in Figure 83B-5 and 83B-7.
In 83B.2.1, change "Transmit de-emphasis" to "Module output emphasis" and "transmitter jitter" to "module output jitter".
In Table 83B-3, delete "Transmitter" before "eye mask", five times including table note, and four more times in the PICS 83B.4.3.
In Table 83B-5, delete "Receiver" before "eye mask", five times including table note, and four more times in the PICS 83B.4.4.
Change "83B.2.3 Receiver Tolerance" to "83B.2.3 Host input signal tolerance".
In Figure 83B-10, change "XLAUI / CAUI
receiver" to "XLAUI / CAUI host input".
If it isn't deleted by another comment, change 83B.4.4 PICS HC12 from "Receiver AC coupling" to "Host input AC coupling".

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See comment 313

Cl **83B** *SC* **83B.1** *P* **396** *L* **49** # 268

Trowbridge, Stephen ALCATEL-LUCENT

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

The title "Figure 83B-3 Chip-Module loss budget " does not indicate the reference frequency

SuggestedRemedy

Change title to: "Figure 83B-3 Chip-Module loss budget at 5.15625 GHz"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
See suggested remedy

Cl **83B** *SC* **83B.1** *P* **397** *L* **10** # 851

Dudek, Michael QLogic Corporation

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

This is actually 83B. The connector loss is unnecessarily restrictive and tighter than CR4/10 and nppi. The loss budget for 83A is 12.38 dB and there isn't a good reason why the 83B loss budget should be this much smaller. This budget alone would allow a connector loss of 2.38 dB however that would be a horrible connector and probably worse than we should consider using.

SuggestedRemedy

Change the max connector loss to 1.74 dB (same as assumed worst case in 85A.4). If this is accepted also change the connector loss from "up to 0.5dB" to "up to 1.74dB" in Figure 83B-5. I am not suggesting a change to figure 83B-7 because the connector there is on the MCB and a better quality connector should be used for this piece of test equipment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Additional detail required on 83A loss budget.

Modify the following sentence in 83A.4:
"This section describes recommended characteristics which are used to describe an XLAUI/CAUI channel."
to
:This section describes recommended characteristics which are used to describe an XLAUI/CAUI channel as shown in Figure 83A-vvv."

Insert figure which shows channel from transmitter to receiver (full length) using 83A-2 as template.

Retimed & non-retimed interfaces do not have the same budgets. 83A provides additional information on link budgeting if 83B characteristics are not met.

[Editor's note: This comment is against 83B.1, hence corrected clause/subclause number fields to 83B]

Cl **83B** *SC* **83B.1** *P* **397** *L* **7** # 329

Dawe, Piers J G Independant

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

If 85A.4 and 86A now support 0.87 dB connector loss, 83B should at least match it (83B should not need a better connector than 86A or 85 does). But no need to deal in 1/100ths of dB (0.2%).

SuggestedRemedy

Change 0.5 to 0.9 here and in Figure 83B-3. Consider reducing the host insertion loss by 0.4 dB to keep the loss budget the same.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Retimed & non-retimed interfaces do not have the same budgets. 83A provides additional information on link budgeting if 83B characteristics are not met.

See comment 851

Cl **83B** *SC* **83B.1** *P* **49** *L* **396** # 114

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Change caption for Figure 83B-3 from "Chip-module loss budget" to "Chip-to-module loss budget"

Change caption for Table 83B-1 from "Chip-module." to "Chip-to-module."

Change title 83B.2 and first sentense Chip-module to Chip-to-module

Change Figure 83B-5, 83B-7 Chip-module to Chip-to-module

Cl **83B** *SC* **83B.2** *P* **18** *L* **397** # 115

Hajduczenia, Marek ZTE Corp.

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

It is said in the text that Figure83B-5 and Figure 83B-7 include definition of compliance points. I do not see any on these figures.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The chip-module XLAUI / CAUI interface specifies compliance points after Host Compliance Board (HCB) as
depicted in Figure 83B-5, and after Module Compliance Board (MCB) as depicted in Figure 83B-7.

Cl **83B** *SC* **83B.2** *P* **397** *L* **20** # 590

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

Label the compliance points.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment 115

Cl **83B** *SC* **83B.2** *P* **397** *L* **24** # 99

Latchman, Ryan

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See sugggested remedy

Cl **83B** *SC* **83B.2** *P* **397** *L* **26** # 330

Dawe, Piers J G Independant

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

"HCB test fixture PCB insertion loss": what's a "HCB test fixture"? Something to test the HCB? Other changes to improve clarity and consistency.

SuggestedRemedy

Change "The reference HCB test fixture PCB insertion loss" to "The reference differential insertion loss of the HCB, excluding the module connector". Next line, change "test fixture" to "HCB". Similarly for MCB.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change "The reference HCB test fixture PCB insertion loss" to "The reference differential insertion loss of the HCB, excluding the module connector". Next line, change "test fixture" to "HCB".

Change "The reference MCB test fixture PCB insertion loss" to "The reference differential insertion loss of the MCB, excluding the module connector". Next line, change "test fixture" to "MCB".

Cl **83B** *SC* **83B.2** *P* **397** *L* **27** # 273

Trowbridge, Stephen ALCATEL-LUCENT

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

See comment 274

Cl **83B** *SC* **83B.2** *P* **397** *L* **32** # 331

Dawe, Piers J G Independant

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

The compliance board losses should be specified down to 10 MHz as in 86A.

SuggestedRemedy

For equations 83B-3 and 83B-4, change the lower limit of the frequency range from 0.25 to 0.01 GHz. Consider similar changes for all specs in 83A and 83B.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See comment 368

Cl **83B** *SC* **83B.2** *P* **397** *L* **32** # 332

Dawe, Piers J G Independant

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

The reference HCB test fixture PCB insertion loss should be a smooth curve like equation 86A-4, with between 1.26 dB (like the 86A HCB) and 2.1 dB (max loss for 83B module PCB) at 5.15625 GHz. This is a TR in case there is delay in finding what HCB loss is achievable.

SuggestedRemedy

Use a scaled version of equation 86A-4. E.g. with 1.8 dB loss at 5.15625 GHz, this would be: 0.0143 + 0.4291 * sqrt(f) + 0.1573 * f

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment 591

Cl **83B** *SC* **83B.2** *P* **397** *L* **32** # 591

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy. Change figure 83B-4

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

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Delete "Up to" for the HCB PCB.

See comment 852

Cl **83B** *SC* **83B.2** *P* **398** *L* **30** # 852
Dudek, Michael QLogic Corporation

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

This is actually 83B The HCB now has a reference loss. It shouldn't say "Up to" for the HCB PCB

SuggestedRemedy

Delete "Up to" for the HCB PCB.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
See suggested remedy

[Editor's note: This comment is against 83B.2, hence corrected clause/subclause number fields to 83B]

Cl **83B** *SC* **83B.2** *P* **398** *L* **41** # 269
Trowbridge, Stephen ALCATEL-LUCENT

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

The title "Figure 83B-5 Chip-module compliance points with HCB" does not indicate the reference frequency.

SuggestedRemedy

Change title to: "Figure 83B-5 Chip-module compliance points with HCB at 5.15625 GHz"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83B** *SC* **83B.2** *P* **398** *L* **49** # 274
Trowbridge, Stephen ALCATEL-LUCENT

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

See comment 273

Cl **83B** *SC* **83B.2** *P* **398** *L* **52** # 333
Dawe, Piers J G Independant

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

The MCB loss for nAUI B is 0.92 dB while the MCB for PPI is 0.67 dB at Nyquist. An implementation e.g. QSFP socket may be capable of either nAUI B or nPPI (and possibly CRn). It would be an advantage if the same MCB could be used with all QSFP modules

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED REJECT.

nAUI modules can be larger. We also have a statement that "The effects of differences between the insertion loss of an actual test fixture and the reference insertion loss should be accounted for in the measurements."

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

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment 853

Cl **83B** *SC* **83B.2** *P* **399** *L* **36** # 592
Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Delete "Up to" for the MCB PCB.
See comment 853

Cl **83B** *SC* **83B.2** *P* **399** *L* **36** # 853
Dudek, Michael QLogic Corporation

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

This is actually in 83B. The MCB now has a reference loss. It shouldn't say "Up to" for the MCB PCB

SuggestedRemedy

Delete "Up to" for the MCB PCB.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

[Editor's note: This comment is against 83B.2, hence corrected clause/subclause number fields to 83B]

Cl **83B** *SC* **83B.2** *P* **399** *L* **47** # 270
Trowbridge, Stephen ALCATEL-LUCENT

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

The title "Figure 83B-7 Chip-module compliance points with MCB " does not indicate the reference frequency.

SuggestedRemedy

change title to: "Figure 83B-7 Chip-module compliance points with MCB at 5.15625 GHz"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83B** *SC* **83B.2.1** *P* **400** *L* **14** # 593
Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

Change to module

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83B** *SC* **83B.2.1** *P* **401** *L* **24** # 798
Ghiasi, Ali Broadcom

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

Log scale hide the critical high freq attributes

SuggestedRemedy

Change to linear scale

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

see comment 799

Cl **83B** *SC* **83B.2.1** *P* **402** *L* **1** # 883

Petrilla, John Avago Technologies

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

Please try to pull note c into page 401.

SuggestedRemedy

Please try to pull note c into page 401.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Remove comment c (points to Figure 83A-8-Transmitter Eye Mask) which is covered in subclause reference.

Cl **83B** *SC* **83B.2.1** *P* **402** *L* **9** # 854

Dudek, Michael QLogic Corporation

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

This is actually in 83B. "x is max rise/fall time in ps" is not explicit. (I don't know what it means!!)

SuggestedRemedy

With one potential meaning change to "x is the rise or fall time in ps whichever is larger"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

change to "x is the rise or fall time (which ever is larger) in ps"

[Editor's note: This comment is against 83B.2.1, hence corrected clause/subclause number fields to 83B]

Cl **83B** *SC* **83B.2.2** *P* **403** *L* **24** # 797

Ghiasi, Ali Broadcom

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

Log scale hide the critical high freq attributes

SuggestedRemedy

Change to linear scale

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

See comment 799

Cl **83B** *SC* **83B.2.2** *P* **403** *L* **49** # 334

Dawe, Piers J G Independant

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Remove note. Reference to subclause includes figure 83A-8

Cl **83B** *SC* **83B.2.3** *P* **403** *L* **50** # 376

Ganga, Ilango Intel Corporation

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

[Editor's note: Comment 16 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
Random jitter is not usually specifed as peak-to-peak but either as RMS or for a given BER.

SuggestedRemedy

Change, "... and 0.15 UI peak-to-peak random jitter" to "and 0.15 UI random jitter for BER = 1E-12".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change, "... and 0.15 UI peak-to-peak random jitter" to "and 0.15 UI peak-to-peak random jitter at BER = 1E-12".
Add the following sentence to 83A.5:
Jitter values are specified at BER 10-12. (last sentence)

Cl **83B** *SC* **83B.2.3** *P* **404** *L* **11** # 885

Petrilla, John Avago Technologies

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

There should not be any inferences that test setups and block diagrams are compulsory.

SuggestedRemedy

Change from "Figure 83B--10 depicts the XLAUI / CAUI jitter tolerance test setup." to "Figure 83B--10 depicts a XLAUI / CAUI jitter tolerance test setup."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83B** *SC* **83B.2.3** *P* **404** *L* **13** # 855

Dudek, Michael QLogic Corporation

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

This is actually in 83B The figure doesn't show the correct eye mask and doesn't give the co-ordinates to be used.

SuggestedRemedy

Replace "defined in figure 83A-9" with "illustrated in figure 83A-8 with the values for X1, X2, Y1 and Y2 given in Table 83B-3"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83B** *SC* **83B.2.3** *P* **404** *L* **20** # 796

Ghiasi, Ali Broadcom

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

No clear what PCB trace stress means is this electrical or mechanical stress or do I need to twist the PCB!

SuggestedRemedy

Replace with "Frequency dependent attenuator *"
* PCB traces are example of Frequency dependent attenuator

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace "...function, and PCB trace stress."
with
"...function, and frequency dependent attenuation stress".

Replance "Stress is then added using PCB
trace or frequency dependent attenuation which emulates PCB loss"
with
"Frequency dependent attenuation stress is then added using PCB trace or frequency dependent attenuation which emulates PCB loss"

Cl **83B** *SC* **83B.2.3** *P* **404** *L* **3** # 884

Petrilla, John Avago Technologies

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

The requirement, "shall be conducted with a stressed input signal which is comprised of at least 0.25 UI peak-to-peak deterministic jitter" is open-ended for stress and, as found with a similar statements in clause 52, very problematic. Experience with clause 52 stressed source definition has led to more careful definitions, e.g. SFF-8431 where target values are specified, Table 86-8 where values are used, or Table 86A-4 where Specification values are used.

SuggestedRemedy

Change from "shall be conducted with a stressed input signal which is comprised of at least 0.25 UI peak-to-peak deterministic jitter ..." to "shall be conducted with a stressed input signal which is comprised of 0.25 UI peak-to-peak deterministic jitter ..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83B** *SC* **83B.4.** *P* **407** *L* # 683

Dambrosia, John Force 10 Networks Inc

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

Missing Major capabilities / options subclause

SuggestedRemedy

add major capabilities / options PICS subclause

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add major capabilities / options PICs subclause with:

NOL (number of lanes)
RATE (data rate)
(above two same as 83A)

IO
Feature: Meets chip-to-module XLAUI / CAUI electrical characteristics
Subclause:83B.2
Value/comment: Supports host / module compliance points

Add the following sentense to 83B.2"... the module connector as
depicted in Figure 83B-5 and Figure 83B-7. Chip-to-module devices shall meet the electrical characteristics defined in this section."

Cl **83B** *SC* **83B.4.3** *P* **407** *L* **36** # 101

Latchman, Ryan

Comment Type **G** *Comment Status* **D**

"De-emphasis shall be off during jitter testing" should have a PICs statement

SuggestedRemedy

Add MC14 De-emphasis off during jitter testing

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Feature: De-emphasis setting during module jitter evaluation
section: 83B.2.1
value: off

Cl **83B** *SC* **83B.4.3** *P* **407** *L* **37** # 102

Latchman, Ryan

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

"AC coupling for both TX and RX paths shall be located in the module." needs a PICs statement

SuggestedRemedy

Add MC15 AC coupling for both Tx and Rx

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Feature: AC coupling for Tx and Rx
section: 83B.2.1
value: present in module

Cl **83B** *SC* **83B.4.3** *P* **407** *L* **4** # 243

Turner, Edward J Gnodal Limited

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

Table line thickness and style of PICS table is not same as in other clauses.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

[Editor's note: This comment is against 83B.4.3, hence corrected clause/subclause number fields to 83B]

Cl **83B** *SC* **83B.4.3** *P* **407** *L* **5** # 594

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

Either add the requirement or remove the PICS entry

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Remove

See comment 680

Cl **83B** *SC* **83B.4.3** *P* **407** *L* **5** # 680

Dambrosia, John Force 10 Networks Inc

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

The SHALL statement points to Tables 83B-2 and 83B-3, but then things are called out singularly in the PICS, and in some cases things that don't have a table entry have a corresponding SHALL statement (MC1); entries in table with no corresponding PICS - module output signal, minimum module differential output return loss, various De-emphasis entires in Table 83B-3; and different names - module input reflection should be minimum module differential input return loss).

SuggestedRemedy

modify PIC to reflect SHALL statement - A module which uses XLAUI / CAUI to interface with a host shall meet the characteristics outlined in Table 83B--2 and Table 83B--3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Remove MC1 - MC13 and replace with the following:

MC1:
Feature: XLAUI / CAUI compliant module
Subclause: 83B.2.1
Value: Meets requirements defined in 83B-2 and 83B-3

Cl **83B** *SC* **83B.4.3** *P* **407** *L* **6** # 100

Latchman, Ryan

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

Single ended output voltage range is no longer in 83B.2.1 since it is an AC coupled interface

SuggestedRemedy

Remove MC1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See comment 680

Cl **83B** *SC* **83B.4.3** *P* **408** *L* **19** # 103

Latchman, Ryan

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

Remove HC12 since this is covered in MC15

SuggestedRemedy

Remove HC12

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See suggested remedy

Cl **83B** *SC* **83B.4.4** *P* **407** *L* **40** # 681

Dambrosia, John Force 10 Networks Inc

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

The SHALL statement points to Tables 83B-4 and 83B-5, but then things are called out singularly in the PICS, and there are conflicts- missing items, or names changed

SuggestedRemedy

modify PIC to reflect SHALL statement - A host which uses XLAUI / CAUI to interface with a module shall meet the characteristics outlined in Table
83B--4 and 83B--5

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Remove HC1 - HC12 and replace with the following:

HC1:
Feature: XLAUI / CAUI compliant host
Subclause: 83B.2.2
Value: Meets requirements defined in 83B-4 and 83B-5

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

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

Either add the requirement or remove the PICS entry

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Remove requirement

Cl **83B** *SC* **83B.4.4** *P* **408** *L* **4** # 682

Dambrosia, John Force 10 Networks Inc

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

PIC HC12 has no corresponding SHALL statement

SuggestedRemedy

add SHALL statement

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Remove HC12. AC coupling is located in the module.

Cl **83C** *SC* **83C** *P* **1** *L* **409** # 116

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

It is correct that having "Example" in the title of the Annex and in each of the figures is redundant, but it is safer to label each figure as an example so that anyone looking at the figure in isolation is aware that it is an illustrative example and not a required configuration. The list of examples is not exhaustive, and a valid implementation may not match any that are shown. Also, it was an agreement of the Task Force that one example (Figure 83-2) should go in the main body and others in an Annex. Figure 83-2 clearly needs to be labeled as an example, and keeping the titles of Annex 83C figures as is maintains consistency with the title of Figure 83-2.

Cl **83C** *SC* **83C** *P* **1** *L* **409** # 117

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Editorial license.

The pagination of this text can be improved. At a minimum, the heading 83C.2 should be moved onto the same page as 83.C.2.1, and the size of the legend boxes on Figure 83C-2 can be reduced.

The opportunity to reduce the sparseness is limited given the template and style guidelines. Floating figures are not an option here since there is no text, and each figure needs to remain under the heading that describes it. There are 54 lines of text space available per page. A heading uses 3 lines. The various figure sizes are:
83C-1 - 24 lines
83C-2 - 28 lines
83C-3 - 25 lines
83C-4 - 25 lines
83C-5 - 29 lines
So no two Figures plus their headings will fit on a single page. The legends for the Figures are already at the smallest point size permitted. There is redundancy in the legends from one Figure from the next, but I don't find a precedent in the base text for having a separate, common legend that applies to multiple figures.

Cl **84** *SC* **84** *P* **226** *L* **47** # 232

Turner, Edward J Gnodal Limited

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

When a Table is inserted using the 802.3ba template with "IEEE format", then when it breaks across multiple pages, the last row on a page does not have a line beneath it. This is to indicate that the table is continued on the next page.

To override this behaviour: In the Table Designer, on the Ruling tab, click on the "Draw Bottom Ruling on Last Sheet Only" tick box until it is cleared (two clicks) and then Apply.

In the published standards, such tables do have a line at the bottom of the first page, but the table title on the next page has "(continued)" at the end in italic font.

The editors will review this across all the Clauses in 802.3ba and adopt the appropriate table style.

Cl **84** *SC* **84.1** *P* **223** *L* **20** # 498

Anslow, Peter Nortel Networks

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

In Table 84-1, the order of clauses is confusing as XLAUI is shown between XLGMII and PCS. Also applies to clause 85 Table 85-1

SuggestedRemedy

Show the clauses in the order that they appear in the stack in Figure 84-1. Do the equivalent for Table 85-1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This needs to be treated as a technical comment.

Make the order in Table 84-1:
RS
XLGMII
PCS
FEC
PMA
XLAUI
AN

Make the equivalent alteration to Table 85-1

Remove the row for Clause 86 from Table 86-2

The table title needs to be changed because a PHY does not include the RS however the Physical Layer does. For a similar reason it would be an improvement to change the text "In order to form a complete PHY" in 84.1.

Change title of Table 84-1 from:
PHY (Physical Layer) clauses associated with the 40GBASE-KR4 PMD
to:
Physical Layer clauses associated with the 40GBASE-KR4 PMD

Change title of Table 85-1 to:
Physical Layer clauses associated with the 40GBASE-CR4 and 100GBASE-CR10 PMDs

Change title of Table 86-2 to:
Physical Layer clauses associated with the 40GBASE-SR4 and 100GBASE-SR10 PMDs

Change title of Table 87-1 to:
Physical Layer clauses associated with the 40GBASE-LR4 PMD

Change title of Table 88-1 to:
Physical Layer clauses associated with the 100GBASE-LR4 and 100GBASE-ER4 PMDs

Also re-order and change 86-1 to more closely match that of the other P802.3ba PMD clauses so that Table 86-2 becomes 86-1.

Each PMD clause to begin:
"This clause specifies the xxx PMD [for 85-88: together with the yyy medium]. When forming a complete Physical Layer, a PMD shall be connected to the appropriate PMA as shown in Table 8x-1, to the medium through the MDI and to the management functions that are optionally accessible through the management interface defined in Clause 45, or equivalent."

where xxx is the name of the relevant PMD/s and yyy refers to the medium where appropriate; making the first sentences:
This clause specifies the 40GBASE-KR4 PMD.

This clause specifies the 40GBASE-CR4 PMD and the 100GBASE-CR10 PMD (including MDI) and the baseband medium.

This clause specifies the 40GBASE-SR4 PMD and the 100GBASE-SR10 PMD together with the multimode fiber medium.

This clause specifies the 40GBASE-LR4 PMD together with the single-mode fiber medium.

This clause specifies the 100GBASE-LR4 PMD and the 100GBASE-ER4 PMD together with the single-mode fiber medium.

Cl **84** *SC* **84.1** *P* **223** *L* **26** # 499

Anslow, Peter Nortel Networks

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

Clause 73 is no longer called "Auto-Negotiation for Backplane Ethernet"

SuggestedRemedy

Since the full title may be too long, change "Auto-Negotiation for Backplane Ethernet" to "Auto-Negotiation" as per Table 85-1. Same issue on Page 232, line 12.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **84** *SC* **84.1** *P* **223** *L* **7** # 625

Dambrosia, John Force 10 Networks Inc

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

The text states the following - "This clause specifies the 40GBASE-KR4 PMD. In order to form a complete PHY, the PMD shall be connected to the appropriate sublayers (see Table 84--1)" but the PIC in 84.11.3 inclues the XLGMII interface which is an optional interface but not a sublayer. however, the XLAUI does not have a PIC.

SuggestedRemedy

add appropriate pic for XLAUI

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **84** *SC* **84.1** *P* **224** *L* **42** # 500

Anslow, Peter Nortel Networks

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

This says "IS_UNITDATA_i.indication" but it should be "PMD:IS_UNITDATA_i.indication" (2 places)

SuggestedRemedy

Change "IS_UNITDATA_i.indication" to "PMD:IS_UNITDATA_i.indication" (2 places). Make the same change in clause 45, Page 237, line 9

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The commenter intended to say Clause 85 rather than 45 in the suggested remedy.

Make the change suggested and also in Clause 85, page 237, line 9.

Cl **84** *SC* **84.11.4.1** *P* **233** *L* **11** # 627

Dambrosia, John Force 10 Networks Inc

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

There is no corresponding "SHALL" statement for FS2

SuggestedRemedy

add appropriate "shall" statement to 84.7.2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **84** *SC* **84.11.4.1** *P* **233** *L* **21** # 510

Anslow, Peter Nortel Networks

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

FS7 Value/Comment says "Set to FAIL". When should it be set to FAIL"

SuggestedRemedy

Change "Set to FAIL" to "Set to FAIL on reset"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **84** *SC* **84.11.4.1** *P* **233** *L* **21** # 509

Anslow, Peter Nortel Networks

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

45.2.1.9.5 is an external reference so it should be dark blue

SuggestedRemedy

Make it dark blue

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **84** *SC* **84.11.4.1** *P* **233** *L* **29** # 511

Anslow, Peter Nortel Networks

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

This says "Requirements of 84.7.6, 84.7.7 and Table 72-6". But Table 72-6 contains many requirements, only one of which must be met.

SuggestedRemedy

Change "Requirements of 84.7.6, 84.7.7 and Table 72-6" to "Requirements of 84.7.6, 84.7.7"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **84** *SC* **84.11.4.1** *P* **233** *L* **34** # 149

Hajduczenia, Marek ZTE Corp.

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

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

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Removing 'is used' does not improve readability of the text.

Cl **84** *SC* **84.11.4.2** *P* **233** *L* **49** # 512

Anslow, Peter Nortel Networks

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

MF3 says "Sets PMD_transmit_fault as specified in 45.2.1.7.5." This should be PMD_receive_fault.

SuggestedRemedy

Change "Sets PMD_transmit_fault" to "Sets PMD_receive_fault". Also 45.2.1.7.5 and 45.2.1.7.4 in MF2 should be links.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **84** *SC* **84.2** *P* **224** *L* **42** # 291

Dawe, Piers J G Independant

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

Missing space in =FAIL

SuggestedRemedy

Insert space

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **84** *SC* **84.2** *P* **224** *L* **42** # 292

Dawe, Piers J G Independant

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

This comment also affects Clause 85

Cl **84** *SC* **84.6** *P* **226** *L* **6** # 501

Anslow, Peter Nortel Networks

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

In Tables 84-2 and 84-3 the MDIO variable names do not all match the names used in Clause 45. Likewise, not all of the register names match with the names in Clause 45. Same issue in Tables 85-2 and 85-3

SuggestedRemedy

In the MDIO variable columns, change "Transmit disable x" to "PMD transmit disable x", change "Global PMD Receive signal detect" to "Global PMD receive signal detect", change "PMD signal detect x" to "PMD receive signal detect x"
In the PMA/PMD register name columns, change "Control 1 register" to PMA/PMD control 1 register", change "Transmit disable register" to "PMD transmit disable register", change "Status x register" to "PMA/PMD status x register", change "Receive signal detect register" to "PMD receive signal detect register". Make equivalent changes to Tables 85-2 and 85-3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

This comment also affects Clause 85

Cl **84** *SC* **84.7.10** *P* **229** *L* **9** # 506

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

This comment also affects Clause 85

Cl **84** *SC* **84.7.11** *P* **229** *L* **17** # 507

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

This comment also affects Clause 85

Cl **84** *SC* **84.7.2** *P* **226** *L* **38** # 901

Ganga, Ilango Intel Corporation

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

The control function variables used in table 84-3 need to be defined in the corresponding subclause in Clause 84. The control function description in 84.7.12 refers to control function in Clause 72. However Clause 72 is applicable to single lane. So description to be added to 84.7.12 to state that the corresponding variables defined for single lane is enumerated to mutiple lanes. For example rx_trained variable is enumerated to rx_trained_0 through rx_trained_3. Variable names with proper enumeration to be defined in Clause 80 so this can be mapped to registers in Clause 45.

SuggestedRemedy

Provide description of variables in appropriate subclaue(s) in Clause 84.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add the following paragraphs at the end of 84.7.12:

"The variables rx_trained_i, frame_lock_i, training_i and training_failure_i (where I goes from 0 to 3) report status for each lane and are equivalent to rx_trained, frame_lock, training and training_failure as defined in 72.6.10.3.1.

If the MDIO interface is implemented, then this function shall map these variables to the appropriate bits in the BASE-R PMD status register (Register 1.151) as specified in 45.2.1.78."

also add appropriate PICS entry

Cl **84** *SC* **84.7.4** *P* **227** *L* **38** # 281

Muller, Shimon Sun Microsystems

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

SIGNAL_DETECT is set to OK only when training is successful.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Upon successful completion of training on all lanes, SIGNAL_DETECT shall be set to OK.

Also update PIC in 84.11.4.1

see also comment 282 against Clause 85

Cl **84** *SC* **84.7.4** *P* **227** *L* **41** # 628

Dambrosia, John Force 10 Networks Inc

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

There is no corresponding PIC for the second SHALL of the following sentece - If the MDIO interface is implemented, then Global_PMD_signal_detect (1.10.0) shall be continuously set to
the value of SIGNAL_DETECT as described in 45.2.1.9.5; and PMD_signal_detect_0 (1.10.1),
PMD_signal_detect_1 (1.10.2), PMD_signal_detect_2 (1.10.3) and PMD_signal_detect_3 (1.10.4) shall be
set to one or zero depending on whether a particular lane's signal_detect, as defined by the training state diagram
in Figure 72-5, returns true or false.

SuggestedRemedy

add appropriate PIC to 84.11.4.1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **84** *SC* **84.7.5** *P* **227** *L* **50** # 898

Ganga, Ilango Intel Corporation

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

change n to italics in variable PMD_signal_detect_n. Also check other instances of this variable. Similarly change i to italics in variable PMD_transmit_disable_i. Why one variable uses n and the other variable uses i. Change both of these to be i to be consistent.

SuggestedRemedy

As per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

also see comment 502

Cl **84** *SC* **84.7.5** *P* **227** *L* **50** # 502

Anslow, Peter Nortel Networks

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

Throughout the draft we have used n to denote the number of lanes and i for a variable. See 84.7.7 for example. Same issue in corresponding subclause of clause 85

SuggestedRemedy

Change "each PMD_signal_detect_n value, where n represents" to "each PMD_signal_detect_i value, where i represents" and show both "i"'s in italic font. Make the same change in subclause 85.7.5, Page 241, line 47

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

also see comment 898

This comment also affects Clause 85

Cl **84** *SC* **84.7.6** *P* **228** *L* **8** # 503

Anslow, Peter Nortel Networks

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

This says "and does not exceed the maximum differential peak-to-peak output voltage specified in Table 72-6.". Since Table 72-6 contains both "Differential peak-to-peak output voltage (max.)" and "Differential peak-to-peak output voltage (max.) with TX disabled" it is not as clear as it should be which limit applies. Same issue on line 23.

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **84** *SC* **84.7.7** *P* **228** *L* **17** # 504

Anslow, Peter Nortel Networks

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

Variables should be in italic font

SuggestedRemedy

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

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **84** *SC* **84.7.8** *P* **228** *L* **38** # 505

Anslow, Peter Nortel Networks

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

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

SuggestedRemedy

Either explain that the loopback function is in the co-located PMA or provide a separate control function. Also, 45.2.1.1.4 should be a link. Apply the same change in 85.7.8

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Make 45.2.1.1.4 a link.

In 45.2.1.1.4 change:
"The local loopback function is mandatory for the 1000BASE-KX, 10GBASE-KR, and 10GBASE-X port type and optional for all other port types,"
to:
"The local loopback function is mandatory for the 1000BASE-KX, 10GBASE-KR, 10GBASE-X, 40GBASE-KR4, 40GBASE-CR4 and 100GBASE-CR10 port types and optional for all other port types,"

The text in 84.7.8 is identical to that in the base document 802.3-2008 where the other back-plane PMDs are described (for example see 72.6.6). Previous implementors have understood that the loopback function is in the co-located PMA. So no other changes to the text are necessary.

This comment also affects Clauses 45 and 85.

This comment is likely to be discussed in the task force.

At the moment it is NOT proposed to implement the following further suggested changes to 84.7.8 and 85.7.8 along with a change to clause 83 because the editor feels it necessary to preserve the word 'mandatory' in Clauses 84 and 85 and because of a desire to make the minimum changes to existing text from the original backplane 802.3ap spec:

In 84.7.8 change:
"Loopback mode shall be provided for the 40GBASE-KR4 PMD by the transmitters and receivers of a device as a test function to the device."
to:
"Local loopback mode is provided by the adjacent PMA for the 40GBASE-KR4 PMD as a test function to the device."

Remove the PICS entry for FS11

In 85.7.8 change:
"Loopback mode shall be provided for the 40GBASE-CR4 and 100GBASE-CR10 PMDs by

the transmitters and receivers of a device as a test function to the device."
to:
"Local loopback mode is provided by the adjacent PMA for the 40GBASE-CR4 and 100GBASE-CR10 PMDs as a test function to the device."

Remove the PICS entry for PF16

In clause 83 make local loopback mandatory for the PMA next to the PMD for 40GBASE-KR4, 40GBASE-CR4 and 100GBASE-CR10 with editorial license.

Change the clause 83 PICS to make local loopback mandatory for the PMA next to the PMD for 40GBASE-KR4, 40GBASE-CR4 and 100GBASE-CR10.

Cl **84** *SC* **84.7.8** *P* **228** *L* **46** # 152

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

Note 2 says that "Placing a network port into loopback mode can be disruptive to a network." - in what way is a network disrupted in such a case? Do you mean that network operation is disrupted ?

SuggestedRemedy

Change to read "Placing a network port into loopback mode can be disruptive to a network operation and carried traffic."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This phrasing is used in 802.3-2008. There is no need to use different wording in 802.3ba.

Cl **84** *SC* **84.7.9** *P* **228** *L* **49** # 153

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

If the MDIO is implemented, PMD_fault is the logical OR of PMD_receive_fault, PMD_transmit_fault, and any other implementation specific fault.change to read "If the MDIO is implemented, PMD_fault corresponds to the logical OR operation on PMD_receive_fault, PMD_transmit_fault, and any other implementation specific fault."Simialr changes to 85.7.9 PMD_fault function, page 242, line 35

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This wording is used in 802.3-2008. There is no need to use different wording in 802.3ba.

Cl **84** *SC* **84.8.1.1** *P* **229** *L* **37** # 151

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

The same test fixture as 10GBASE-KR shall be used on all lanes as described in 72.7.1.1change to read "The test fixture defined for 10GBASE-KR in 72.7.1.1 shall be used on all lanes ."

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **84** *SC* **84.8.2** *P* **229** *L* **42** # 508

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

This says "Receiver electrical characteristics at TP4 for 40GBASE-KR4 shall be the same as 10GBASE-KR, as detailed in 72.7.1.1 through 72.7.2.5.". But 72.7.1.1 is for the transmitter. Receiver characteristics start at 72.7.2.1

SuggestedRemedy

Change "as detailed in 72.7.1.1 through 72.7.2.5." to "as detailed in 72.7.2.1 through 72.7.2.5."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85** *P* **237** *L* **30** # 246

Turner, Edward J Gnodal Limited

Comment Type **E** *Comment Status* **D**

No space between the and 100GBASE-CR10

SuggestedRemedy

Add a space between the and 100GBASE-CR10

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85** *P* **238** *L* **54** # 233
Turner, Edward J Gnodal Limited

Comment Type **E** *Comment Status* **D**

Table 85-3. No line at the bottom of the table.

SuggestedRemedy

Add line to bottom of table as per other tables split over pages

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85** *P* **244** *L* **26** # 812
Moore, Charles Avago Technologies

Comment Type **TR** *Comment Status* **D**

min amplitude(linear fit) spec of 0.24V conflicts with Linear fit pulse spec on line 23-24

SuggestedRemedy

delete min amplitude (linear fit) spec

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Delete min amplitude (linear fit) spec Table 85-4.
Given: Transmiter DC amplitude-0.34 min, 0.6 max
Given: Linear fit pulse-greater than 0.63*Transmitter DC amplitude
Than: Linear fit pulse>.63*.34>0.214 v
but 0.214 v is < min
where: min amplitudes(linear fit), "p" 0.24 v

Cl **85** *SC* **85** *P* **244** *L* **46** # 813
Moore, Charles Avago Technologies

Comment Type **T** *Comment Status* **D**

Deterministic jitter is not specified so saying DCD is considered part of it is meaningless

SuggestedRemedy

in note 'e' delete "Duty Cycle Distortion is considered part of the deterministic jitter distribution"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT

Cl **85** *SC* **85** *P* **245** *L* **18** # 248
Turner, Edward J Gnodal Limited

Comment Type **E** *Comment Status* **D**

The apostrophe on assembly's is a sans-serif type, whereas the style elsewhere is to use a serif type with a tail.

SuggestedRemedy

Use serif apostrophe. Also on page 246 at line 38, and page 339 at line 30.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85** *P* **245** *L* **35** # 815
Moore, Charles Avago Technologies

Comment Type **TR** *Comment Status* **D**

The "square wave test pattern" is not specified. The spec could be calling for alternating 1s and 0s, which will not work

SuggestedRemedy

Change 6) to:
"The reference lane of the transmitter under test sends a square wave test pattern, consisting of 5 consecutive ones followed by five consecutive zeros, while all other lanes send either scrambled idle or PRBS-31"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change 6) to:
"The reference lane of the transmitter under test sends a square wave test pattern, consisting of 5 consecutive ones followed by five consecutive zeros, while all other lanes send either scrambled idle or PRBS31"

Cl **85** *SC* **85** *P* **246** *L* **50** # 817

Moore, Charles Avago Technologies

Comment Type **T** *Comment Status* **D**

Some explanation of the intent of the following procedure may make the procedure easier for the reader to understand

SuggestedRemedy

Change:
"Instead the following process is defined for the verification of transmit equalizer performance at TP2."
to:
"Instead the effective channel characteristic between the equalizer function and TP2 is determined and then equalized to measure the transmit equalizer function directly. The process below accomplishes this."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change:
"Instead the following process is defined for the verification of transmit equalizer performance at TP2."
to:
"The following process enables accurate characterization of the equalizer performance at TP2 by determining and correcting for the frequency dependent loss and phase shift of the signal path from the transmit function to TP2."

Cl **85** *SC* **85** *P* **247** *L* **13** # 818

Moore, Charles Avago Technologies

Comment Type **TR** *Comment Status* **D**

The peak value of the linear fit pulse is out of alignment with table 85-1

SuggestedRemedy

Change :
"The peak value of the linear fit pulse from step 3, p, shall be greater than 240 mV."
to:
"DC amplitude, the sum of linear fit pulse response, p(k), from step 3 divided by M from step 3, shall be greater than 0.34V and no greater than 0.6V. The peak of the linear fit pulse response from step 3 shall be greater than 0.63*DC amplitude."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change :
"The peak value of the linear fit pulse from step 3, p, shall be greater than 240 mV."
to:
"DC amplitude, the sum of linear fit pulse response, p(k), from step 3 divided by M from step 3, shall be greater than 0.34V and less than or equal to 0.6V. The peak of the linear fit pulse response from step 3 shall be greater than 0.63*DC amplitude."

Cl **85** *SC* **85** *P* **247** *L* **22** # 234

Turner, Edward J Gnodal Limited

Comment Type **E** *Comment Status* **D**

Table 85-5. Thin line under title cells.

SuggestedRemedy

Use a thicker line under the title cells, as per tables in other clauses

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85** *P* **247** *L* **5** # 819

Moore, Charles Avago Technologies

Comment Type **TR** *Comment Status* **D**

Step 3 is referenced elsewhere and should be as clear as possible. I think that its clarity can be improved.

SuggestedRemedy

Change:
"Compute the linear fit to the captured waveform per 85.8.3.3.5"
to:
"Compute the linear fit to the captured waveform and the linear fit pulse response p(k) per 85.8.3.3.5."
Make the same change to step 9 (line 35).
Also in steps 10 and 11 (lines 37-39) change:
"linear fit pulse, p,"
to:
"linear fit pulse response, p(k),"
and in notes b and c to Table 85-4, change:
"linear fit pulse"
to:
"linear fit pulse response p(k)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change:
"Compute the linear fit to the captured waveform per 85.8.3.3.5"
to:
"Compute the linear fit to the captured waveform and the linear fit pulse response p(k) per 85.8.3.3.5."
Make the same change to step 9 (line 35).
Also in steps 10 and 11 (lines 37-39) change:
"linear fit pulse, p,"
to:
"linear fit pulse response, p(k),"
and in notes b and c to Table 85-4, change:
"linear fit pulse"
to:
"linear fit pulse response p(k)"

Cl **85** *SC* **85** *P* **248** *L* **18** # 249

Turner, Edward J Gnodal Limited

Comment Type **E** *Comment Status* **D**

The quote marks are a sans-serif type, whereas the style elsewhere is to use a serif type with a tail.

SuggestedRemedy

Use serif quote marks. Also at lines 22 and 25 on the same page.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85** *P* **251** *L* **9** # 820

Moore, Charles Avago Technologies

Comment Type **TR** *Comment Status* **D**

The text of 85.8.3.5 Test Fixture and Figure 85-5 Transmitter test fixture, are very unclear.

SuggestedRemedy

Have 85.8.3.5 State:
"The test fixture shown in Figure 85-5 or its functional equivalent is required for all Transmitter tests and for receiver return loss measurement. It shall consist of a plug connecting either to a 40-GBASE-CR4 or 100GBASE-CR10 MDI connector as appropriate and all necessary signals connected to RF connectors and all other signals terminated with 100 Ohms differential. When mated with a cable assembly test fixture it shall meet the specifications of 85.10.9."
I Will provide a suggested drawing.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response comment#831 for updated figure.
See response comment#832 for updated text.

Cl **85** *SC* **85** *P* **253** *L* **1** # 821

Moore, Charles Avago Technologies

Comment Type **T** *Comment Status* **D**

Receiver interference tolerance test is not actually performed at TP3 since there is no Test fixture. The Calibration of the Test channel is in effect done at TP4

SuggestedRemedy

In 85.8.4.2, change:
"Receiver interference tolerance test at TP3"
to:
"Receiver interference tolerance test"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85** *P* **25385** *L* **4** # 822
Moore, Charles Avago Technologies

Comment Type **TR** *Comment Status* **D**
85.8.4.2 does not make it clear that both tests must pass

SuggestedRemedy
Change The paragraph in 85.8.4.2 To:
"The receiver shall path both Test 1 (short channel) and Test 2 (long channel) using the interference tolerance parameters listed in Table 85-7."

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.
See response comment#534

Cl **85** *SC* **85** *P* **254** *L* **39** # 836
Dudek, Michael QLogic Corporation

Comment Type **E** *Comment Status* **D**
poor English

SuggestedRemedy
replace "at pattern" with "at the pattern"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.
See comment#697.

[Editor's note: This comment is against 85.8.4.3.2, hence updated the subclause number field accordingly]

Cl **85** *SC* **85** *P* **255** *L* **9** # 251
Turner, Edward J Gnodal Limited

Comment Type **E** *Comment Status* **D**
The referenced section 86.8.8.2 does not exist.

SuggestedRemedy
Replace with 86.8.2.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **85** *SC* **85** *P* **256** *L* **7** # 235
Turner, Edward J Gnodal Limited

Comment Type **E** *Comment Status* **D**
Table 85-8. Thin line under title cells.

SuggestedRemedy
Use a thicker line under the title cells, as per tables in other clauses

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **85** *SC* **85** *P* **257** *L* **16** # 236
Turner, Edward J Gnodal Limited

Comment Type **E** *Comment Status* **D**
Table 85-9. Thin line under title cells.

SuggestedRemedy
Use a thicker line under the title cells, as per tables in other clauses

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **85** *SC* **85** *P* **261** *L* **20** # 237
Turner, Edward J Gnodal Limited

Comment Type **E** *Comment Status* **D**
Table 85-10. Thin line under title cells.

SuggestedRemedy
Use a thicker line under the title cells, as per tables in other clauses

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **85** *SC* **85** *P* **265** *L* **37** # 238
Turner, Edward J Gnodal Limited

Comment Type **E** *Comment Status* **D**
Table 85-11. Thin line under title cells.

SuggestedRemedy
Use a thicker line under the title cells, as per tables in other clauses

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **85** *SC* **85** *P* **266** *L* **28** # 253
Turner, Edward J Gnodal Limited

Comment Type **E** *Comment Status* **D**

style-2 has a lower case s whereas elsewhere it has an uppercase s.

SuggestedRemedy

Capitalise the s.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85** *P* **269** *L* **37** # 254
Turner, Edward J Gnodal Limited

Comment Type **E** *Comment Status* **D**

There are two references to IEC XXXXX-X-XX

SuggestedRemedy

Replace with a valid reference.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response to comment#693.

Cl **85** *SC* **85** *P* **272** *L* **7** # 247
Turner, Edward J Gnodal Limited

Comment Type **E** *Comment Status* **D**

No space between Clause and 85

SuggestedRemedy

Add a space between Clause and 85

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85** *P* **278** *L* **5** # 239
Turner, Edward J Gnodal Limited

Comment Type **E** *Comment Status* **D**

Thin line under title cells.

SuggestedRemedy

Use a thicker line under the title cells, as per PICS tables in other clauses

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.1** *P* **29** *L* **235** # 148
Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

In Table 85-1, "not applicable" should be written as "N/A" since that is what is used in PICS throughout the 802.3 standards.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Check style guide

Cl **85** *SC* **85.10.10.3** *P* **259** *L* **42** # 378
Ganga, Ilango Intel Corporation

Comment Type **T** *Comment Status* **D**

[Editor's note: Comment 65 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
Repeating D2.2 comment 65:
Draft says "Multiple Disturber Near-End Crosstalk (MDNEXT) loss is specified as the power sum of the individual NEXT losses." and "MDNEXT loss is determined by summing the power of the four or ten individual pair-to-pair differential
NEXT loss values". These statements are not correct: MDNEXT is the power sum of the individual NEXTs, but as equation 85-26 shows, "MDNEXT loss" is the inverse of the power sum of the individual inverses of "NEXT losses".
The power sum of the individual NEXT losses would be dominated by the weakest NEXT, which is not what we want.

SuggestedRemedy

My preferred solution is change "NEXT loss" to "NEXT" and "MDNEXT loss" to "MDNEXT", and flip the signs. This brings the signs in line with CEI, SFP+, CXP.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve with comment#537
Change "MDNEXT loss is determined by summing the power of the four or ten individual pair-to-pair differential NEXT loss values using Equation (85-26)."
To: "MDNEXT loss is determined from the four or ten individual pair-to-pair differential NEXT loss values using Equation (85-26)."

Cl **85** *SC* **85.10.10.3** *P* **270** *L* **32** # 377

Ganga, Ilango Intel Corporation

Comment Type **E** *Comment Status* **D**

[Editor's note: Comment 64 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
Inconsistent notation: here we have MDNEXT subscript loss while previously in 85 we had Insertion_loss, IL, Return_loss. 85A uses IL a lot.

SuggestedRemedy

My preferred solution is to use simply "MDNEXT" to and flip the sign, and replace Insertion_loss and IL with SDD21 (and flip the sign), in line with CEI, SFP+ and CXP.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Replace subscripted loss for MDNEXT and MDFEXT with _loss e.g., MDNEXT_loss(f) and MDFEXT_loss(f).

Cl **85** *SC* **85.10.2** *P* **257** *L* **13** # 689

Healey, Adam LSI Corporation

Comment Type **T** *Comment Status* **D**

The caption for Table 85-9 states these are "example" maximum cable assembly insertion loss requirements. This does not appear to be an example, they are the actual requirements as stated in the preceding paragraph.

SuggestedRemedy

Delete the word "Example" from the caption.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.10.2** *P* **257** *L* **7** # 638

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

The SHALL statement states - The maximum allowed values of the polynomial coefficients a1, a2, and a4 of the fitted cable assembly
insertion loss of each pair of the 40GBASE-CR4 and 100GBASE-CR10 shall meet the specifications summarized
in Table 85--9 unless otherwise noted. The PIC value refers to Eq 85-19.

SuggestedRemedy

Modify SHALL statement to include equation

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change:"The maximum allowed values of the polynomial coefficients a1, a2, and a4 of the fitted cable assembly insertion loss of each pair of the 40GBASE-CR4 and 100GBASE-CR10 shall meet the specifications summarized
in Table 85-9 unless otherwise noted."
To:"The maximum allowed values of the polynomial coefficients a1, a2, and a4 of the fitted cable assembly insertion loss of each pair of the 40GBASE-CR4 and 100GBASE-CR10 in Equation (85-19) and the maximum insertion loss at 5.15625 GHz shall meet the specifications summarized in Table 85-9 unless otherwise noted."

Cl **85** *SC* **85.10.5** *P* **259** *L* **42** # 537

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

Comment 65 against D 2.3 was agreed to be re-submitted by the Editor against D 3.0. The directed proposed response only makes changes against Page 259 line 44, but other changes are needed to fix this issue. Note: another comment proposes changes to the "where" sections of equations 85-26 and 85-27.

SuggestedRemedy

In addition to the change needed on Page 259 line 44, on line 42 change "(MDNEXT) loss is specified as the power sum of the individual NEXT losses" to "(MDNEXT) loss is specified using the individual NEXT losses". On Page 260 line 11, change "MDFEXT loss is specified as the power sum of the individual FEXT losses. MDFEXT loss is determined by summing the power of the three or nine ..." to "MDFEXT loss is specified using the individual FEXT losses. MDFEXT loss is determined from the three or nine ..." on Page 419 line 9 change "is specified as the power sum of the individual NEXT" to "is specified using the individual NEXT", on line 14 change "specified as the power sum of the individual FEXT" to "specified using the individual FEXT"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.10.5** *P* **259** *L* **48** # 538

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

Equations 85-26 and 85-27 should show the units as dB

SuggestedRemedy

Add the units "dB" to equations 85-26 and 85-27.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.10.5** *P* **260** *L* **4** # 539

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

In equation 85-26, "NLi(f) is the power of the NEXT loss at frequency f of pair combination i, in dB,". What is the meaning of "the power of" here? Isn't NLi(f) simply the NEXT loss? If some manipulation of the loss is implied, then it should be explicit in the equation. Also applies to equation 85-27

SuggestedRemedy

Change "NLi(f) is the power of the NEXT loss at frequency f of pair combination i, in dB," to "NLi(f) is the NEXT loss at frequency f of pair combination i, in dB," Make equivalent change to equation 85-27

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.10.7** *P* **260** *L* **29** # 298

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

Need some text to explain what this is all about. I've made the comment technical in case my description needs correction.

SuggestedRemedy

Insert text: Integrated crosstalk noise <sigma_x> is an estimate of the RMS crosstalk noise voltage that would be generated by all disturber transmitters with maximum slew rate. It is derived via the near-end and far-end ICNs by calculation from the multiple disturber near-end and far-end crosstalk losses, assuming a second-order transmitter response and a fourth-order receiver response, as follows.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add text before paragraph page 260, line 30:"In order to limit multiple disturber crosstalk noise at a receiver the cable assembly integrated crosstalk noise (ICN) is specified in relationship to the measured insertion loss. ICN is calculated from the MDFEXT and MDNEXT.
Add text after paragraph page 260, line 30:"The RMS crosstalk noise is characterized at the output of a specified receive filter utilizing a specified transmitter waveform and the measured multiple disturber crosstalk transfer functions. The transmitter and receiver filters are defined in Equation (85-28) and Equation (85-29) as weighting functions to the multiple disturber crosstalk in Equation (85-30) and Equation (85-31)."

Cl **85** *SC* **85.10.7** *P* **260** *L* **46** # 690

Healey, Adam LSI Corporation

Comment Type **T** *Comment Status* **D**

The phrase "...and Fast Fourier transform (FFT)..." does not seem to fit.

SuggestedRemedy

Change the sentence to read "Note that -3 dB transmit filter bandwidths fnt and fft are inversely proportional to the 20 to 80% rise and fall times Tnt and Tft respectively."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change:"Note that the 3 dB transmit filter bandwidths fnt and Fast Fourier transform (FFT) are inversely proportional to the 20% to 80% rise and fall times Tnt and Tft respectively."
To:"Note that the 3 dB transmit filter bandwidths fnt are inversely proportional to the 20% to 80% rise and fall times Tnt and Tft respectively.

Cl **85** *SC* **85.10.7** *P* **260** *L* **46** # 379

Ganga, Ilango Intel Corporation

Comment Type **E** *Comment Status* **D**

[Editor's note: Comment 66 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
What does "Fast Fourier transform (FFT) [is] inversely proportional to the 20% to 80% rise and fall time Tft" mean?
Is what follows "Note that" a NOTE, i.e. informative and not part of the standard? Although the style guide allows it, it's ambiguous and should be avoided.
Other editorial issues.
I think the equation at line 48 and the units in Table 85-10 are not consistent (needs checking).

SuggestedRemedy

Change
"Define the weight at each frequency fn using" to "The weights Wnt and Wft at each frequency fn are given by" (or add "here lines for Wnt and Wft).
Change
"where the equation parameters are given in Table 85-10.
Note that the 3 dB transmit filter bandwidths fnt and Fast Fourier transform (FFT) are inversely proportional to the 20% to 80% rise and fall times Tnt and Tft respectively. The constant of proportionality is 0.2365 (e.g. Tnt fnt = 0.2365). In addition, fr is the 3 dB reference receiver bandwidth which is set to 7.5 GHz."
to
"where
fnt is in GHz and is given by Equation 85-new1,
fft is in GHz and is given by Equation 85-new2,
fr, the reference receiver 3 dB bandwidth, is 7.5 GHz,
and the other equation parameters are given in Table 85-10.
fnt= 236.5 / Tnt (85-new1)
fft= 236.5 / Tft (85-new2)
where Tnt and Tft are the 20% to 80% rise and fall times in picoseconds given in Table 85-10."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response comment#890

Cl **85** *SC* **85.10.7** *P* **260** *L* **46** # 691

Healey, Adam LSI Corporation

Comment Type **T** *Comment Status* **D**

I would be useful to declare that sinc(x) is sin(pi*x)/(pi*x) since there is some ambiguity as to whether this is the normalized sinc function or not.

SuggestedRemedy

Add a statement to this paragraph that defined sinc(x).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Page 260, line 35. Add sentence, "The sinc function is defined by sinc(x)=sin(pi*x)/(pi*x)."

Cl **85** *SC* **85.10.7** *P* **260** *L* **47** # 692

Healey, Adam LSI Corporation

Comment Type **T** *Comment Status* **D**

The conversion factor 0.2365 assumes that fnt is expressed in Hz and Tnt is in seconds. At line 32, fnt is implied to be units of MHz and Table 85-10 states the units of Tnt are picoseconds which may lead to confusion.

SuggestedRemedy

State that the conversion factor is for fnt in units of Hz and Tnt in units of seconds.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change:"The constant of proportionality is 0.2365 (e.g. Tnt fnt = 0.2365).
To:"The constant of proportionality is 0.2365 (e.g. Tnt fnt = 0.2365; with Tnt in Hz and fnt in seconds)."

Cl **85** *SC* **85.10.7** *P* **260** *L* **53** # 299

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

Is the factor of 2 correct here?

SuggestedRemedy

Check, correct if necessary

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Factor of two is correct.

Cl **85** *SC* **85.10.7** *P* **261** *L* **30** # 639

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

SHALL statement is "The total integrated crosstalk RMS noise voltage shall meet the values determined by Equation (85--33)
illustrated in Figure 85--11." No PIC and the CA5 PIC does not refer to equation 85-33

SuggestedRemedy

modify CA5 to include equation 85-33

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
In CA5 Change: "Equation (85-32)"
To:"Equation (85-33)"

Cl **85** *SC* **85.10.8** *P* **262** *L* **25** # 769

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

Document organization, it would a better fit to move 85.10.8 in to test fixture section

SuggestedRemedy

Move the section after 85.8.3.5

Proposed Response *Response Status* **W**

PROPOSED REJECT.
85.8 is MDI electricals; 85.8.3.5 test fixture is for TP2 or TP3 testing.
85.10 is cable assembly characteristics; 85.10.8 test fixture is for the cable assembly.

Cl **85** *SC* **85.10.8** *P* **262** *L* **32** # 839

Dudek, Michael QLogic Corporation

Comment Type **ER** *Comment Status* **D**

It is strange to call the reference loss by a name including max

SuggestedRemedy

Change the name ILcatfmax to ILcatfref here and on line 39

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See comment#540.

[Editor's note: This comment is against 85.10.8, hence updated the subclause number field accordingly]

Cl **85** *SC* **85.10.8** *P* **263** *L* **31** # 540

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

Equation 85-34 defines a reference loss, not a maximum so the variable name shouldn't be "ILcatfmax"

SuggestedRemedy

In Equation 85-34 change "ILcatfmax" to "ILcatf" (2 places). Also in Figure 85-12 use the same variable name instead of "IL_CATF"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.10.9** *P* **262** *L* **21** # 770

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

Document organization, it would a better fit to move 85.10.9 in to test fixture section

SuggestedRemedy

Move the section after 85.8.3.5

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Resolve with comment#769.
85.10.9 should follow after 85.10.8.

Cl **85** *SC* **85.10.9.1** *P* **263** *L* **41** # 768

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

mated test fixture is missing SCC and SCD specifications

SuggestedRemedy

CL 85 has now incorporated HCB and MCB from CL 86 but did not include SCC and SCD requirements. Please copy form 86A.5.1.1.2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Consider with Table 85-4-Transmitter characteristics at TP2.

Cl **85** *SC* **85.10.9.1** *P* **263** *L* **47** # 541

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

In equation 85-36 the brackets in "(dB)" should not be in italic font.

SuggestedRemedy

Change "(dB)" to all normal font.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.10.9.3** *P* **265** *L* **27** # 763

Misek, Brian Avago Technologies

Comment Type **E** *Comment Status* **D**

This section could be helped by the use of "sigma nx" and "sigma fx" in the last 2 table entries. In addition the first 2 lines are new values not presented else where. Are thes presented to make sure on of the channels is not really bad? If so state that in the introduction and give it a special "sigma" name. subscript of senx and sefx sould work.

SuggestedRemedy

See comment suggestion

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add sentence below paragraph page 265 line 27" The mated test fixtures integrated crosstalk RMS noise voltages for the single-disturber near-end crosstalk loss and the single-disturber far-end crosstalk loss are determined using Equation (85-28) through Equation (85-32) by substituting the single disturber near-end for the multiple disturber near-end crosstalk loss and the single disturber far-end crosstalk loss for the multiple disturber far-end crosstalk loss."

Cl **85** *SC* **85.10.9.3** *P* **265** *L* **35** # 764

Misek, Brian Avago Technologies

Comment Type **TR** *Comment Status* **D**

Since this is a specification on the mated test fixtures, Should there be 2 tables. One for QSFP and one for CXP. This would keep the QSFP mated boards as clean as possible.

SuggestedRemedy

Add separate values for QSFP put same valuse as place holder.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The commenter has not provided a sufficiently complete proposal to support the need for suggested remedy.

Cl **85** *SC* **85.11** *P* **266** *L* **22** # 542

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

This says "is coupled to the cable assembly, as per 85.8, by the MDI." but 85.8 is "MDI Electrical specifications for 40GBASE-CR4 and 100GBASE-CR10" not a definition of the cable assembly.

SuggestedRemedy

Change "the cable assembly, as per 85.8," to "the cable assembly, as per 85.10,".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.11.1** *P* **266** *L* **28** # 801

Chalupsky, David Intel Corporation

Comment Type **E** *Comment Status* **D**

typo: "style-2"

SuggestedRemedy

replace "style-2" with "Style-2"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response comment#253

Cl **85** *SC* **85.11.1.1** *P* **267** *L* **32** # 772

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

MLD can reorder lanes but figure 85-12 shows specific SL# connected to the each pin of the MDI connector. Connecting lane 1 to lane one of the the MDI could compromise the signal integrity based on QSFP and CXP connector pin out.
Unlike CL85, CL86 allows connecting any host lane to module lane for ease of flexiblity and SI

SuggestedRemedy

Current statement "The Style-1 40GBASE-CR4 MDI connector contact assignment shall be as defined in Table 85-12." to "Example Style-1 40GBASE-CR4 MDI connector contact assignment is shown in Table 85-12. Other wiring assignment is acceptable as long as Tx lane and Rx lane pairs are not broken and the polarity is maintained."

Proposed Response *Response Status* **W**

PROPOSED REJECT. MLD is independent of MDI source lane (SL) naming conventions; MDI contact assignments consistent with SFF-8436.

Cl **85** *SC* **85.11.1.2** *P* **268** *L* **17** # 643

Dambrosia, John Force 10 Networks Inc

Comment Type **ER** *Comment Status* **D**

Fig 85-19 and 85-20 are labeled the same thing

SuggestedRemedy

correct figure titles

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change:"Figure 85-20-Example Style-2 cable assembly plug"
To:"Figure 85-20-Example Style-2 MDI board receptacle"

Cl **85** *SC* **85.11.1.2** *P* **268** *L* **29** # 806

Chalupsky, David Intel Corporation

Comment Type **T** *Comment Status* **D**

Incorrect figure title. Fig 85-20 is the MDI receptacle, not the cable plug

SuggestedRemedy

replace Figure 85-20 title with "Example Style-2 MDI board receptacle"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response comment#643

Cl **85** *SC* **85.11.1.2.1** *P* **269** *L* **32** # 773

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

MLD can reorder lanes but figure 85-12 shows specific SL# connected to the each pin of the MDI connector. Connecting lane 1 to lane one of the the MDI could compromise the signal integrity based on QSFP and CXP connector pin out.
Unlike CL85, CL86 allows connecting any host lane to module lane for ease of flexiblity and SI

SuggestedRemedy

Current statement "The Style-1 40GBASE-CR4 MDI connector contact assignment shall be as defined in Table 85-12." to "Example Style-1 40GBASE-CR4 MDI connector contact assignment is shown in Table 85-12. Other wiring assignment is acceptable as long as Tx lane and Rx lane pairs are not broken and the polarity is maintained."

Proposed Response *Response Status* **W**

PROPOSED REJECT. See response comment#772.

Cl **85** *SC* **85.11.1.3** *P* **271** *L* **32** # 774

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

MLD can reorder lanes but figure 85-12 shows specific SL# connected to the each pin of the MDI connector. Connecting lane 1 to lane one of the the MDI could compromise the signal integrity based on QSFP and CXP connector pin out.
Unlike CL85, CL86 allows connecting any host lane to module lane for ease of flexiblity and SI

SuggestedRemedy

Current statement "The Style-1 40GBASE-CR4 MDI connector contact assignment shall be as defined in Table 85-12." to "Example Style-1 40GBASE-CR4 MDI connector contact assignment is shown in Table 85-12. Other wiring assignment is acceptable as long as Tx lane and Rx lane pairs are not broken and the polarity is maintained."

Proposed Response *Response Status* **W**

PROPOSED REJECT.
See response to comment#772.

Cl **85** *SC* **85.11.2** *P* **269** *L* **37** # 693

Healey, Adam LSI Corporation

Comment Type **T** *Comment Status* **D**

The IEC numbers for the 100GBASE-CR10 connectors are missing.

SuggestedRemedy

Supply the correct reference or add an editor's note that informs the reader when the correct reference is expected to be added.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response comment#544

Cl **85** *SC* **85.11.2** *P* **269** *L* **37** # 544

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

If an IEC document for this connector is going to be published in time for 802.3ba to reference it, then it must be going through the IEC balloting process already.

SuggestedRemedy

Either change "IEC XXXXX-X-XX" to the draft IEC document number and add an editor's note to clause 1.5 giving the expected publishing date or replace this text with an alternative reference. (2 places).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **85** *SC* **85.11.2** *P* **37** *L* **269** # 144
Hajduczenia, Marek ZTE Corp.

Comment Type **TR** *Comment Status* **D**

This comment serves as a reminder to insert proper IEC reference number instead of "IEC XXXXX-X-XX"

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **85** *SC* **85.11.3** *P* **269** *L* **42** # 543
Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

It would be more logical for the subclause on "100GBASE-CR10 MDI AC-Coupling" to be a sub-clause of 85.11.2

SuggestedRemedy

Since 85.11.3 is 100GBASE-CR10 specific, make it subclause of 85.11.2.1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Move 85.11.3 under 85.11.2.1

Cl **85** *SC* **85.13** *P* **272** *L* **3** # 805
Chalupsky, David Intel Corporation

Comment Type **E** *Comment Status* **D**

Clause 85 PICS missing the copyright release

SuggestedRemedy

add footnote to 85.13 section title. See Clause 86 PICS (86.11.4) for an example of required footnote text and formatting

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add footnote to 85.13 section title: "Copyright release for PICS proformas: Users of this standard may freely reproduce the PICS proforma in this subclause so that it can be used for its intended purpose and may further publish the completed PICS."

Cl **85** *SC* **85.13.1** *P* **272** *L* **7** # 804
Chalupsky, David Intel Corporation

Comment Type **E** *Comment Status* **D**

typo: "Clause85"

SuggestedRemedy

Replace "Clause85" with "Clause 85"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. See response comment#247

Cl **85** *SC* **85.13.4** *P* **273** *L* **14** # 629
Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

PIC for XLAUI but not for CAUI

SuggestedRemedy

add appropriate pic for CAUI

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.13.4** *P* **273** *L* **16** # 546
Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

The 2 "PCS" PICS entries indicate that "Support of 40GBASE-R PCS" and "Support of 100GBASE-R PCS" are both mandatory for a given device.

SuggestedRemedy

Replace both "PCS" entries and both "PMA" entries with a single entry like the "SF1" entry in 86.11.4.1. "Compatible with 40GBASE--R or 100GBASE--R PCS and PMA"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response comment#807.

Cl **85** *SC* **85.13.4** *P* **273** *L* **16** # 807

Chalupsky, David Intel Corporation

Comment Type **T** *Comment Status* **D**

Major capabilities / options table incorrectly implies that BOTH CR4 AND CR10 are required. Support of either PMD is optional; the relevant PCS & PMA's are mandatory dependent upon PMD type.

SuggestedRemedy

Add two rows to table (after XLAUI row) to indicate support for CR4 & CR10 PMDs.
First row: Item = "*CR4"; Feature = "40GBASE-CR4 PMD"; Value/comment: "Can operate as 40GBASE-CR4 PMD"; status= "O.1"
Second row: Item = "*CR10"; Feature = "100GBASE-CR10 PMD"; Value/comment: "Can operate as 100GBASE-CR10 PMD"; status= "O.1"
Change Status of the next four rows from "M" to "CR4:M" and "CR10:M" as appropriate.
i.e., 40GBASE-R PCS & PMA are "CR4:M"; 100GBASE-R PCS & PMA are "CR10:M"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve with comment#546.
For committee discussion.

Cl **85** *SC* **85.13.4** *P* **273** *L* **30** # 630

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

Given the multiple skew and skew variation constraints, the values comment should direct the reader to 85.5

SuggestedRemedy

modify value/comment for DSC by adding "constraints specified in 85.5" at end of sentence

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.13.4** *P* **273** *L* **9** # 545

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

Whether or not the XLGMII or CGMII are supported or not matters for the PCS but is of no relevance to these PMD's. Also, the other PMDs in the 802.3ba draft do not have these items.

SuggestedRemedy

Remove the "XLGMI" and "CGMII" PICS items. (If not then at least change "XLGMII interface" to "XLGMII" and "CGMI interface" to "CGMII" since the last I is interface and "CGMI interface" looks wrong)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change: "XLGMII interface" to XLGMII and "CGMI interface" to "CGMII"

Cl **85** *SC* **85.13.4.1** *P* **274** *L* **21** # 547

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

PF6 says "For positive differential voltage corresponds to rx_bit = one"

SuggestedRemedy

Change "For positive differential voltage ..." to "A positive differential voltage ..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.13.4.1** *P* **274** *L* **24** # 548

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

In PF7 "via PMD_SIGNAL.indication (SIGNAL_DETECT)" should be "via PMD:IS_SIGNAL.indication (SIGNAL_DETECT)"

SuggestedRemedy

Change "via PMD_SIGNAL.indication" to "via PMD:IS_SIGNAL.indication"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.13.4.1** *P* **274** *L* **37** # 633
Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**
85.7.6 is for Global PMD transmit disable function, not lane by lane transmit disable as indicated in PF13.

SuggestedRemedy
change subclause to 85.7.7

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **85** *SC* **85.13.4.1** *P* **274** *L* **37** # 549
Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**
In PF13 "Allows each lane transmitters to ..." should be "Allows each lane transmitter to ..."

SuggestedRemedy
Change "transmitters" to "transmitter"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **85** *SC* **85.13.4.1** *P* **274** *L* **46** # 550
Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**
In PF17 the reference "72.6.10" should be dark blue

SuggestedRemedy
Make "72.6.10" dark blue

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **85** *SC* **85.13.4.2** *P* **275** *L* **17** # 551
Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**
In MF4 and MF5, "45.2.1.7.4" and "45.2.1.7.5" should be links.

SuggestedRemedy
Make "45.2.1.7.4" and "45.2.1.7.5" links.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **85** *SC* **85.13.4.3** *P* **276** *L* **10** # 552
Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**
In DS2 "Equation (85-1)" and "Equation (85-2)" should be links.

SuggestedRemedy
Make "Equation (85-1)" and "Equation (85-2)" links.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **85** *SC* **85.13.4.3** *P* **276** *L* **12** # 553
Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**
In DS3 the reference to "85.8.3.7" should be "85.8.3.6"

SuggestedRemedy
In DS3 change "85.8.3.7" to "85.8.3.6"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **85** *SC* **85.13.4.5** *P* **277** *L* **19** # 640
Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**
No SHALL statement for CA6, and it is not clear how EQ 85-16 fits into the requirement

SuggestedRemedy
Add SHALL statement and clarify relationship to EQ 85-16

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

In CA6 delete:"and Equation (85-16)"
Change:"The reference test fixture
printed circuit board insertion loss is given in Equation (85-34)."
To:"The reference test fixture
printed circuit board insertion loss shall meet the values determined using Equation (85-34)."

Cl **85** *SC* **85.13.4.5** *P* **277** *L* **26** # 554

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

In CA9 "Mated test fixture crosstalk loss" should be "Mated test fixtures integrated crosstalk noise"

SuggestedRemedy

Change "Mated test fixture crosstalk loss" to "Mated test fixtures integrated crosstalk noise"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.13.4.5** *P* **277** *L* **30** # 555

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

In CA10 the reference to "85.10.9" should be "85.10.10"

SuggestedRemedy

In CA10 change "85.10.9" to "85.10.10"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.13.4.5** *P* **277** *L* **34** # 556

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

Items CA12 through CA17 and MDC1 through MDC3 are shown as "CBL:M" or "M". This means that any implementation must support all connector types (both 40G and 100G).

SuggestedRemedy

Create "*CR4C1", "*CR4C2" and "*CR10C" PICS entries for CR4 Style-1, CR4 Style-2 and CR10 connectors and make them optional. (see *PMA40 and *PMA100 in 83.7.3 or Cl 88 PICS). Then make CA12 through CA17 and MDC1 through MDC3 "CR4C1:M " etc.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response comment#808.
For committee discussion.

Cl **85** *SC* **85.13.4.5** *P* **277** *L* **34** # 809

Chalupsky, David Intel Corporation

Comment Type **T** *Comment Status* **D**

PICs requires cable assembly to have all three connector types. Also pin assignment PICs for cables do not have Status or Support fields. This can be remedied by creating an Item for each cable assembly type to be used as conditions in 85.13.4.5

SuggestedRemedy

Add three rows to options table (85.13.4) to indicate cable assembly type.
First added row: Item = "*CA401"; Feature = "40GBASE-CR4 Style-1 cable assembly";
Value/comment: "Cable assembly supports 40GBASE-CR4 Style-1"; status= "CBL:O.3"
Second added row: Item = "*CA402"; Feature = "40GBASE-CR4 Style-2 cable assembly";
Value/comment: "Cable assembly supports 40GBASE-CR4 Style-2"; status= "CBL:O.3"
Third added row: Item = "*CA100"; Feature = "100GBASE-CR10 cable assembly";
Value/comment: "Cable assembly supports 100GBASE-CR4"; status= "CBL:O.3"
Change cable assembly PICS table (85.13.4.5) to use appropriate predicate items in Status field.
Change the Status field for Items CA12 and CA13 to "CBL*CA401:M"
Change the Status field for Items CA14 and CA15 to "CBL*CA402:M"
Change the Status field for Items CA16 and CA17 to "CBL*CA100:M"
Change Support field for CA13, CA15, and CA17 to match CA12 Support field.
Option: The status "CBL*CA401:M" is redundant since CA401 only applies to CBL, thus you could drop the CBL predicate and only use CA401/CA402/CA100 in the above Status changes.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve with comment#556
For committee discussion.

Cl **85** *SC* **85.13.4.5** *P* **277** *L* **37** # 641

Dambrosia, John Force 10 Networks Inc

Comment Type **ER** *Comment Status* **D**

subclause reference should be to 85.11.1.1

SuggestedRemedy

correct subclause reference

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.13.4.5** *P* **277** *L* **41** # 642

Dambrosia, John Force 10 Networks Inc

Comment Type **ER** *Comment Status* **D**

subclause reference should be to 85.11.2.1

SuggestedRemedy

correct subclause reference

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change:"85.11.1"
To:"85.11.1.2.1"

Cl **85** *SC* **85.13.4.5** *P* **277** *L* **42** # 557

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

Item CA16 has a Value/Comment of "40GBASE-CR4 Style-2 plug (SFF-8642 plug)" but it is for a CR10 connector.

SuggestedRemedy

Change to "100GBASE-CR10 plug (SFF-8642 plug)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.13.4.5** *P* **277** *L* **44** # 644

Dambrosia, John Force 10 Networks Inc

Comment Type **ER** *Comment Status* **D**

CA17 subclause reference should be to 85.11.3

SuggestedRemedy

correct subclause reference

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change:"85.11.2"
To:"85.11.3"

Cl **85** *SC* **85.13.4.5** *P* **277** *L* **47** # 645

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

no corresponding SHALL statements to subclauses referenced for CA18

SuggestedRemedy

add shall statements or clarify subclause references

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
In CA18, delete 85.11.3,
85.11.1.1.1.
In CA18, add reference 85.8.4.6.

Cl **85** *SC* **85.13.4.6** *P* **278** *L* **11** # 558

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

Item MDC3 says "100GBASE-CR10 plug (SFF-8642 plug)" but the MDI is defined to be a receptacle.

SuggestedRemedy

Change to "100GBASE-CR10 receptacle (SFF-8642 receptacle)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.13.4.6** *P* **278** *L* **6** # 808

Chalupsky, David Intel Corporation

Comment Type **T** *Comment Status* **D**

Two problems with MDI PICs. 1) implies that all three connector types are required, s/b dependent upon PMD/MDI type. 2) use of CBL predicate is incorrect as this is for MDI, not cable. This can be remedied by creating an Item for each MDI type to be used as conditions in 85.13.4.6.

SuggestedRemedy

Add two rows to options table (85.13.4) to indicate if CR4 PMD is using Style 1 or 2 MDI.
First added row: Item = "*MDIST1"; Feature = "Style-1 MDI Connector"; Value/comment: "40GBASE-CR4 device uses Style-1 MDI"; status= "O.2"
Second added row: Item = "*MDIST2"; Feature = "Style-2 MDI Connector"; Value/comment: "40GBASE-CR4 device uses Style-2 MDI"; status= "O.2"
Change MDI connector PICS table (85.13.4.6) Status columns to use dependencies.
Replace Item MDC1 status with "CR4*MDIST1:M"
Replace Item MDC2 status with "CR4*MDIST2:M"
Replace Item MDC3 status with "CR10:M"
Note: This remedy is dependent upon adoption of CR4/CR10 PICs Items proposed in related comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
For committee discussion.

Cl **85** *SC* **85.2** *P* **236** *L* **44** # 513

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

Missing "."

SuggestedRemedy

Change "defined in 80.3" to "defined in 80.3."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.4** *P* **237** *L* **30** # 802

Chalupsky, David Intel Corporation

Comment Type **E** *Comment Status* **D**

typo: "the100GBASE-CR10"

SuggestedRemedy

add a space after "the"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. See response comment#246

Cl **85** *SC* **85.6** *P* **238** *L* **5** # 631

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

There is a PIC statement for Item MD in 85.13.4, but no corresponding SHALL statement in 85.6.

SuggestedRemedy

add appropriate SHALL statement to 85.6.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Ensure consistency across clauses.
For committee discussion.

Cl **85** *SC* **85.7.1** *P* **240** *L* **19** # 293

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

Draft says "The cable assembly test fixture of Figure 85-12 or its functional equivalent, is required". Elsewhere in 802.3, "functional" is used to represent something more high level, or digital e.g. "4.1 Functional model of the MAC method" and "85.13.4.1 PMD Functional specifications". Here, we need electrical equivalence. Also, if you use the words "is required", do you need a PICS?

SuggestedRemedy

Change "The cable assembly test fixture of Figure 85-12 or its functional equivalent, is required"." to "The cable assembly test fixture of Figure 85-12 or its equivalent, is used", or to "The cable assembly test fixture of Figure 85-12 or its electrical equivalent, is used". Similarly in 85.8.3.4, 85.8.3.5, 85.10.8.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Consistent with 70.7.1.1 and 54.6.3.1 Test fixtures use of "functional equivalent".

Cl **85** *SC* **85.7.1** *P* **240** *L* **33** # 784

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

TP2 location as identified on Fig 85-2 is not correct

SuggestedRemedy

Please add TP2 test fixture dotted below the current diagram and its output designated as TP2

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Figure is too busy to include suggested illustration. Subclause text sufficiently describes TP2 "
unless specified otherwise, all transmitter measurements and tests defined in Table 85-4 are made at TP2 utilizing the test fixture specified in 85.8.3.5."

Cl **85** *SC* **85.7.1** *P* **240** *L* **33** # 785

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

TP3 location as identified on Fig 85-2 is not correct

SuggestedRemedy

TP3 is the output of the cable measured as measured with the cable test fixture. Add doted line to show cable test fixture and designate TP3 signal on it

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Figure is too busy to include suggested illustration. Subclause text sufficiently describes TP3. See response to comment#828.

Cl **85** *SC* **85.7.1** *P* **240** *L* **9** # 828

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D**

TP3 is not at the input end of the mated connector. It is at a specified loss from this point.

SuggestedRemedy

Replace the input end of the mated connector TP3 with TP3 using the test fixture specified in 85.8.3.5

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change:" all receiver
measurements and tests defined in 85.8.4 are made at the input end of the mated connector TP3."
To:" all receiver
measurements and tests defined in 85.8.4 are made at TP3 using the test fixture specified in 85.8.3.5."

[Editor's note: This comment is against 85.7.1, hence corrected the subclause number field accordingly]

Cl **85** *SC* **85.7.1** *P* **46** *L* **240** # 150

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

In caption of Figure 85-2, what is the 'half link'? Do you mean that only one link direction is illustrated?

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Page 240, line 5
Change:"
A 40GBASE-CR4 or 100GBASE-CR10 link is illustrated in Figure 85-2."

To:"
A 40GBASE-CR4 or 100GBASE-CR10 link in one direction is illustrated in Figure 85-2."

Cl **85** *SC* **85.7.2** *P* **241** *L* **3** # 632

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

The following paragraph "The 40GBASE-CR4 PMD Transmit function shall convert the four bit streams requested by the PMD service interface messages D:IS_UNITDATA_0.request to PMD:IS_UNITDATA_3.request into four separate electrical streams. A positive output voltage of SL<p> minus SL<n> (differential voltage) shall correspond to tx_bit = one. The 100GBASE-CR10 PMD Transmit function shall convert the ten bit streams requested by the PMD service interface messages PMD:IS_UNITDATA_0.request to PMD:IS_UNITDATA_9.request. A positive output voltage of SL<p> minus SL<n> (differential voltage) shall correspond to tx_bit = one." seems to justify the PF1 and PF3 PICS in 85.13.4.1, but not the PF2 PIC

SuggestedRemedy

add appropriate Shall statement to 85.7.2 in relation to PF2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Delete:PF1, renumber list; consistent with other 802.3ba clauses.

Cl **85** *SC* **85.7.4** *P* **241** *L* **30** # 282

Muller, Shimon Sun Microsystems

Comment Type **E** *Comment Status* **D**

SIGNAL_DETECT is set to OK only when training is successful.

SuggestedRemedy

Insert "successful" between "Upon" and "completion".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.7.4** *P* **241** *L* **35** # 829

Dudek, Michael QLogic Corporation

Comment Type **ER** *Comment Status* **D**

Section 83.7.4 is labelled Global PMD From line 35 on the lane by lane signal detect is described and then section 84.7.5 which is the lane by lane function refers back to this.

SuggestedRemedy

Move the information on lane by lane signal detect from 84.7.4 to 87.7.5. Also consider putting this very long winded text into a table format.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

[Editor's note: This comment is against 85.7.4, hence corrected the subclause number field accordingly]
Global PMD signal detect function
and PMD lane-by-lane signal detect function treated similarly across clauses.
Global and lane by lane signal detect subclauses are useful to delineate requirements.

Resolve with comment#635.

Cl **85** *SC* **85.7.5** *P* **241** *L* **46** # 635

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

85.7.5 does not include a SHALL statement for PIC MF3 in 85.13.4.2

SuggestedRemedy

Modify sentence as follows - When the MDIO is implemented, each PMD_signal_detect_n value, where n represents the lane number in
the range 0:3 for 40GBASE-CR4 and 0:9 for 100GBASE-CR10, shall be continuously updated as described in
85.7.4 above.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Resolve with comment#529.

Cl **85** *SC* **85.7.5** *P* **45** *L* **241** # 146

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

Strike "above" from the end of line 45 - it is irrelevant.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.7.6** *P* **51** *L* **241** # 145

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

There are several subclauses, which clearly describe Optional features, yet the captions do not reflect that (1) Change caption 85.7.6 to read "Global PMD transmit disable function (Optional)"(2) Change caption 85.7.7 to read "PMD lane-by-lane transmit disable function (Optional)"(3) Change caption 85.7.9 to read "PMD_fault function (Optional)"(4) Change caption 85.7.10 to read "PMD transmit fault function (Optional)"(5) Change caption 85.7.11 to read "PMD receive fault function (Optional)"(6) Change caption 84.7.10 to read "PMD transmit fault function (Optional)"(7) Change caption 84.7.11 to read "PMD receive fault function (Optional)"(8) Change caption 84.7.6 to read "Global PMD transmit disable function (Optional)"(9) Change caption 84.7.7 to read "PMD lane-by-lane transmit disable function (Optional)"(10) Change caption

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The subclauses contain the requirements (e.g. optional or mandatory).

Cl **85** *SC* **85.7.8** *P* **23** *L* **242** # 147

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

When loopback mode is selected, transmission change to read "When the loopback mode is enabled, transmission"Similar comment applies to 84.7.8, page 228, line 33.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
For committee discussion for consistency across clauses.

Cl **85** *SC* **85.7.9** *P* **242** *L* **37** # 634

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

Shouldn't there be a SHALL statement defining PMD-fault with corresponding PIC, as well as SHALL statement regarding mapping to register bit 1.1.7?

SuggestedRemedy

Add corresponding PICS to 85.13.4.1 and SHALL statements in 85.7.9

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Ensure consistency between clauses.

Cl **85** *SC* **85.7.9** *P* **242** *L* **39** # 514

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

This says "is mapped to register bit 1.1.7 as listed in". 1.1.7 is bit 7 of register 1.1.

SuggestedRemedy

Change "is mapped to register bit 1.1.7 as listed in" to "is mapped to bit 1.1.7 as listed in"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Ensure consistency as register bit is used elsewhere as bit in register (see 45.2.3.15)
For committee discussion.

Cl **85** *SC* **85.8.3** *P* **244** *L* **10** # 294

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

Draft has a table row "Unit interval nominal 85.8.3.8 96.969697 ps". No other 10G/lane PMD has a similar row. However many digits you add, it will never be correct because 1000/10.3125 is a recurring decimal.

SuggestedRemedy

Delete the row, here and in Table 85-6. Delete "The corresponding unit interval is nominally 96.969697 ps." in 85.8.3.8. If you think that not all your readers know what a unit interval is, as it's the same for Tx and Rx, add a sentence at 85.8, "The 40GBASE-CR4 and 100GBASE-CR10 PMDs use NRZ signaling at nominally 10.3125 GBd on each lane, for which the unit interval is approximately 96.97 ps."

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Unit interval nominal provided in other clauses in base document e.g., 47, 54. Your suggested remedy provides information in text rather than table.

Cl **85** *SC* **85.8.3** *P* **244** *L* **22** # 515

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

The "Value" for the Transmiter DC amplitude is "> 0.34 min, 0.6 max". Since the value 0.34 is "min", the inclusion of ">" is confusing. Likewise, ">0.63*Transmitter DC amplitude" is a different style from the rest of the table for no good reason.

SuggestedRemedy

Change "> 0.34 min, 0.6 max" to " "0.34 min, 0.6 max". Correct spelling of transmitter in Parameter column. Also, change "Linear fit pulse" to "Linear fit pulse (min)" and change ">0.63*Transmitter DC amplitude" to "0.63*Transmitter DC amplitude".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change "> 0.34 min, 0.6 max" to " "0.34 min, 0.6 max". Correct spelling of transmitter in Parameter column. Also, change "Linear fit pulse" to "Linear fit pulse (min)" and change ">0.63*Transmitter DC amplitude" greater than or equal to "0.63*Transmitter DC amplitude".

Cl **85** *SC* **85.8.3** *P* **244** *L* **26** # 687

Healey, Adam LSI Corporation

Comment Type **T** *Comment Status* **D**

The rows corresponding to the "linear fit pulse" (circa line 24) and "min amplitudes(linear fit)" (circa line 27) are redundant and inconsistent. The appropriate requirement is that the peak amplitude of the linear fit pulse be no less than 0.63 times the estimated transmitter DC amplitude (computed as stated in note b).

SuggestedRemedy

Remove the row "min amplitudes(linear fit)..." from Table 85-4. In 85.8.3.3 (page 247, line 13) remove the line "The peak value of the linear
fit pulse from step 3, p, shall be greater than 240 mV."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response to comment#812 and #818

Cl **85** *SC* **85.8.3** *P* **244** *L* **26** # 755

Misek, Brian Avago Technologies

Comment Type **TR** *Comment Status* **D**

Line needs to be removed. Lines 22-24 replaced this

SuggestedRemedy

Remove

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response to comment#812.

Cl **85** *SC* **85.8.3** *P* **244** *L* **26** # 516

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

"p" and "e" are variables, so should be in italic font

SuggestedRemedy

Show "p" and "e" in italic font.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.8.3** *P* **244** *L* **27** # 517

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

This doesn't say whether the "normalized error(linear fit), "e"" of 0.037 is max or min

SuggestedRemedy

Change "normalized error(linear fit), "e"" to "max normalized error(linear fit), "e""

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.8.3** *P* **244** *L* **32** # 518

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

For the "Far-end transmit output noise (max.)" limits it would be better to point to equations 85-2 and 85-3 than give values of 2 and 1 mV

SuggestedRemedy

Change "2" to "See Equation (85--2)" and "1" to "See Equation (85--3)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
In Table 85-4 add to parameter Far-end Tx output noise next to 2 See Equation (85-2) and add next to 1 See Equation (85-3)

Cl **85** *SC* **85.8.3** *P* **244** *L* **36** # 775

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

No test method is provided for DDJ

SuggestedRemedy

Total jitter is measured with PRBS31 (pattern 3) at BER of 10-12. Data Dependent jitter is measured with PRBS9 based on method given in 85.8.3 with following definition
DDJ=max(dt1, dt2, ...,dt256) - min(dt1, dt2, ...,dt256).
Section 85.8.3 would need to be updated or the other option is to create a standalone section.
Total Jitter Excluding DDJ = TJ - DDJ

Proposed Response *Response Status* **W**

PROPOSED REJECT. D2.2 Comment#98 resolution implemented DDJ test method.
D2.2 Comment#98 Response:
Measure Total jitter at BER 1E-12 per 83A.5.1.=TJ
Measure DDJ with PN9=DDJ
Total Jitter excluding Data Dependent Jitter = TJ - DDJ
Editor given license to implement response incorporating comment#218 in response.
D2.2 Comment#218 add definition for DDJ:
Response comment#218 -DDJ is a jitter component where jitter that is not correlated to the data pattern has been removed.
D2.3 implementation of comment#98 and comment#218:
See Table 85-4-Transmitter characteristics at TP2 summary table entry "Total jitter excluding data dependent jitter" and footnote (f).
(f)Total jitter at a BER of 10-12 measured per 83A.5.1 excluding data dependent jitter (DDJ). DDJ is a jitter component where jitter that is not correlated to the data pattern has been removed. DDJ is measured with PRBS9 as specified in 83.5.10.

Cl **85** *SC* **85.8.3** *P* **244** *L* **43** # 519

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

M is a variable, so should be in italic

SuggestedRemedy

Change "M" to italic font

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.8.3** *P* **244** *L* **47** # 520

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

"83A.5.1" and "83.5.10" should be links

SuggestedRemedy

Make "83A.5.1" and "83.5.10" links and black

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.8.3.1** *P* **245** *L* **3** # 521

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

Use naming as per dambrosia_01_0909.pdf

SuggestedRemedy

Change "The differential return loss, in dB," to "The differential output return loss, in dB,". Also, on Page 252, line 39 change "The differential return loss, in dB," to "The differential input return loss, in dB,".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.8.3.2** *P* **245** *L* **27** # 756

Misek, Brian Avago Technologies

Comment Type **ER** *Comment Status* **D**

Term ICN is too general, this is far-end integrated cross talk which is given the symbol sigma with subscript fx in the referenced section equation 85-31.

SuggestedRemedy

Change ICN to symbol sigma with fx subscript.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.8.3.2** *P* **245** *L* **35** # 522
Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**
"PRBS-31" should be "PRBS31"

SuggestedRemedy
Change "PRBS-31" to "PRBS31"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **85** *SC* **85.8.3.2** *P* **245** *L* **35** # 757
Misek, Brian Avago Technologies

Comment Type **E** *Comment Status* **D**
Other transmitters is too general and can lead to a reading that the Near end transmitters must be present.

SuggestedRemedy
Change "all other" to "all co-propagating channels"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

Change:"The reference lane of the transmitter under test sends a square wave test pattern while all other transmitter lanes send either scrambled idle or PRBS-31."

To:"The reference lane of the transmitter under test sends a square wave test pattern while all other adjacent transmitter lanes send either scrambled idle or PRBS-31."

Cl **85** *SC* **85.8.3.3** *P* **246** *L* **33** # 523
Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**
In "c(n)", n is a variable, so should be in italic font. Also, why do items a to c and a1 to c1 use "n" and d1 uses "k" as a variable? k would be a better choice since n is used for the number of lanes elsewhere.

SuggestedRemedy
Change the font of "n" to italic (6 places) and also on Page 248, line 7. Unless there is a good reason to use "k" only in d1), change to "c(k)" throughout with "k" in italic (or alternatively i).

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **85** *SC* **85.8.3.3** *P* **247** *L* **13** # 758
Misek, Brian Avago Technologies

Comment Type **TR** *Comment Status* **D**
Lines 13-16 have been superceded by Table 85-4 lines 22-24 and page 245 lines 44 and 45

SuggestedRemedy
Remove

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE. See response to comment#818.

Cl **85** *SC* **85.8.3.3** *P* **247** *L* **3** # 524
Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**
"83.5.10" should be a link. Also on line 34

SuggestedRemedy
Make "83.5.10" a link and black. Also on line 34

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **85** *SC* **85.8.3.3** *P* **247** *L* **39** # 525
Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**
In "sampled pulse pi" the "i" should be a subscript.

SuggestedRemedy
In "sampled pulse pi" make the "i" a subscript.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE. In sampled pulse pi make i subscript in subclause.

Cl **85** *SC* **85.8.3.3.1** *P* **248** *L* **1** # 688

Healey, Adam LSI Corporation

Comment Type **T** *Comment Status* **D**

Incorrect equation corresponding to the ratio 2.57 +/- 10% (in the numerator, subtract c(1) and not c(-1)).

SuggestedRemedy

Change to "...and the ratio (c(0)-c(1)+c(-1))/(c(0)+c(1)+c(-1)) is 2.57 +/- 10%."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change: "(c(0)+c(1)-c(-1))/
(c(0)+c(1)+c(-1))
is 2.57 +/-10%."
To: " (c(0)-c(1)+c(-1))/(c(0)+c(1)+c(-1)) is 2.57 +/- 10%."

Cl **85** *SC* **85.8.3.3.1** *P* **248** *L* **1** # 759

Misek, Brian Avago Technologies

Comment Type **ER** *Comment Status* **D**

How can 2 equations equal the same thing? (c(0)+c(1)-c(-1))/(c(0)+c(1)+c(-1)) is 1.29 and (c(0)+c(1)-c(-1))/(c(0)+c(1)+c(-1)) is 2.57

SuggestedRemedy

One of these has a typo

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See comment#688

Cl **85** *SC* **85.8.3.3.1** *P* **248** *L* **1** # 526

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

The two ratios:
"(c(0)+c(1)-c(-1))/(c(0)+c(1)+c(-1))"
"(c(0)+c(1)-c(-1))/(c(0)+c(1)+c(-1))"
appear to be identical, so how do they give 1.29 +/-10% and 2.57 +/-10% at the same time?

SuggestedRemedy

Presumably the ratios should have different equations.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response comment#688

Cl **85** *SC* **85.8.3.3.2** *P* **248** *L* **11** # 830

Dudek, Michael QLogic Corporation

Comment Type **ER** *Comment Status* **D**

The existing wording is very difficult to follow.

SuggestedRemedy

Replace "to be difference in the value measured to prior to" with "to be the difference in the value measured prior to"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

[Editor's note: This comment is against 85.8.3.3.2, hence updated the subclause number field accordingly]

Cl **85** *SC* **85.8.3.3.3** *P* **248** *L* **22** # 527

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

In "c(1)" the "c" should be italic.

SuggestedRemedy

In "c(1)" make the "c" italic.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.8.3.3.5** *P* **248** *L* **45** # 528

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

In "y(k)" the "k" should be italic.

SuggestedRemedy

In "y(k)" make the "k" italic. Do the same on Page 249 lines 21 and 30

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.8.3.3.5** *P* **248** *L* **46** # 529

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

In "M-by-N" the "-by-" should not be italic as it is not a variable.

SuggestedRemedy

In "M-by-N" make the "-by-" appear in normal font. Do the same on Page 249, lines 6, 15 and 47.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.8.3.4** *P* **250** *L* **20** # 870

Petrilla, John Avago Technologies

Comment Type **T** *Comment Status* **D**

The low frequency end of the range for insertion loss in 85 is 0.05 GHz (Eqs 85-14, 85-16, 85-20, 85-23, 85-24, 85-34, 85-35, 85-36, 85-37) in 83A is 0.25 GHz (Eqs 83A-1, 83A-2, 83A-9), in 83B is 0.25 GHz (Eqs 83B-1, 83B-2, 83B-3, 83B-4), in 85A is 0.05 GHz (85A-1, 85A-2, 85A-3, 85A-4, 85A-5) and in 86A is 0.01 GHz (86A-4, 86A-5, 86A-6, 86A-7, 86A-15, 86A-16). Since scrambled data has low frequency content it seems prudent to set the insertion loss frequency requirements to the lowest practical level to guard against undesired loss of low frequency content.

SuggestedRemedy

Set the low frequency end of the range for insertion loss in 85 from 0.05 GHz to 0.01 GHz (Eqs 85-14, 85-16, 85-20, 85-23, 85-24, 85-34, 85-35, 85-36, 85-37) in 83A from 0.25 GHz to 0.01 GHz (Eqs 83A-1, 83A-2, 83A-9), in 83B from 0.25 GHz to 0.01 GHz (Eqs 83B-1, 83B-2, 83B-3, 83B-4), and in 85A from 0.05 GHz to 0.01 GHz (85A-1, 85A-2, 85A-3, 85A-4, 85A-5).

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Low frequency range of 0.05 GHz in clause 85 and 85A for stated equations is sufficient as impairments are well behaved below 0.05 GHz and will yield sufficient margin to extrapolted limit to 0.01 GHz; in 85 (Eqs 85-14, 85-16, 85-20, 85-23, 85-24, 85-34, 85-35, 85-36, 85-37); in 85A (85A-1, 85A-2, 85A-3, 85A-4, 85A-5).

Cl **85** *SC* **85.8.3.4** *P* **250** *L* **22** # 760

Misek, Brian Avago Technologies

Comment Type **TR** *Comment Status* **D**

The minimum loss channel is missing. This loss makes sure the RL can be met with realistic host IC's It is present in 86A and as such should be present in 85 that share the same port.

SuggestedRemedy

Add additional eqation by copying equation 86A-16 and adding the upper limit line that is represented by this eqation to Figure 85-4

Proposed Response *Response Status* **W**

PROPOSED REJECT.
See response tocomment#716.

Cl **85** *SC* **85.8.3.4** *P* **250** *L* **36** # 776

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

CL 85A TP0 to TP2 definition require min loss why does CL85 does not require min channel loss?

SuggestedRemedy

Please add definition of CL86A6 min channel loss to this section

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Equation 86A-16 for IL min does not sufficiently characterize TP0-TP2
or TP3-TP5 insertion loss e.g., 0 dB @ 1 GHz,
~2.08 dB @ 5.15625 GHz.
TP0 to TP2 = 2.08= [TxRx-PCB]+[Mated connector IL]+[TPTF/HCB IL]
TP0 to TP2 = 2.08= [TxRx-PCB]+[Mated connector IL]+1.26
[TxRx-PCB]+[Mated connector IL]=0.82 dB

Cl **85** *SC* **85.8.3.5** *P* **251** *L* **15** # 831

Dudek, Michael QLogic Corporation

Comment Type **T** *Comment Status* **D**

Figure 85-5 is difficult to follow.

SuggestedRemedy

Add a box labelled DUT to the left of the diagram with an output with the mating connector to the TP2 or TP3 test fixture. Put a box around everything to the right of the TP2 or TP3 vertical line. Label this box Test Equipment. Move the label for the line TP2 or TP3 higher so that it is the highest line in the diagram.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

[Editor's note: This comment is against 85.8.3.5, hence updated the subclause number field accordingly]

Cl **85** *SC* **85.8.3.5** *P* **251** *L* **19** # 771

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

Currently TP2/TP3 test fixtrue hangs in air

SuggestedRemedy

Please add host to the left of the TP2/TP3 test fixture. Replace the DC blocks and scope with rf port

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response to comment#831.

Cl **85** *SC* **85.8.3.5** *P* **251** *L* **20** # 384

Ganga, Ilango Intel Corporation

Comment Type **T** *Comment Status* **D**

[Editor's note: Comment 29 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
Fig 85-5 state transmitter test fixture on the left dotted line show TP2/Tp3 test fixture. TP3 is a reciver test point how could it be called transmitter test fixtrue!

SuggestedRemedy

Please repalce the figure showing MCB-HCB mated pair, you borrow fig 86-3 but with CL85 test point on it

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See respose to comment#831

Cl **85** *SC* **85.8.3.6** *P* **251** *L* **33** # 832

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D**

I don't think it is feasible to get 15dB return loss up to 5GHz from the test fixture including the connector and I don't think refering back to clause 72 helps.

SuggestedRemedy

Change "test fixture shall" to "test fixture excluding the connector shall. Replace the last sentence with "The test fixture when mated with the cable assembly test fixture described in 85.10.8 meet the impedance requirements described in 85.10.9.2"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
[Editor's note: This comment is against 85.8.3.6, hence updated the subclause number field accordingly]

Delete:" The differential load impedance applied to the transmitter output of the test fixture depicted in Figure 85-5
shall be 100 O."

Change:" The differential return loss, in dB, of the test fixture shall meet Equation (85-15)."

To:"The differential return loss, in dB, of the test fixture is specified in a mated state and shall meet the requirements of 85.10.9.2."

Delete:"The test
fixture impedance is equivalent to the test fixture impedance specified in 72.7.1.2."

Change:" The test fixture of Figure 85-5, or its functional equivalent, is required for measuring the transmitter specifications
in 85.8.3 at TP2 and TP3 with the exception of the return loss specified in 85.8.3.6.
To:"The test fixture of Figure 85-5, or its functional equivalent, is required for measuring the transmitter specifications
in 85.8.3 at TP2 and TP3."

Cl **85** *SC* **85.8.3.7** *P* **251** *L* **32** # 636

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

There is PIC DS4 with no corresponding SHALL statement

SuggestedRemedy

add PIC

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change:"The reference test fixture printed circuit board insertion loss is given in Equation (85-16)."
To:"The reference test fixture printed circuit board insertion loss shall meet the values determined by Equation (85-16)."

Cl **85** *SC* **85.8.3.7** *P* **251** *L* **48** # 380

Ganga, Ilango Intel Corporation

Comment Type **T** *Comment Status* **D**

[Editor's note: Comment 63 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
"The effects of differences ... should be accounted for" is too weak: needs to be required not just recommended. Compare text at 86A.5.1.1.
If we were not trying to move to Sponsor ballot this would be a TR.

SuggestedRemedy

Change "The effects of differences between the insertion loss of an actual test fixture and the reference insertion loss should be accounted for in the measurements." to
"Any differences between the insertion loss of an actual test fixture and the reference insertion loss are accounted for in the measurements."
Similarly in 85.10.8 and 83B.2 (twice).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change: "The effects of differences between the
insertion loss of an actual test fixture and the reference insertion loss should be accounted for in the measurements."
To:"The differences between the insertion loss of an actual test fixture and the reference insertion loss are to be accounted for in the measurements."

Cl **85** *SC* **85.8.3.7** *P* **251** *L* **51** # 833

Dudek, Michael QLogic Corporation

Comment Type **T** *Comment Status* **D**

The insertion loss is now reference not maximum.

SuggestedRemedy

Change ILtfmax to ILtfref in equation 85-16. Also make the same change on line 4 page 252, and change maximum to reference in the description on this line.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See response comment#530.

[Editor's note: This comment is against 85.8.3.7, hence updated the subclause number field accordingly]

Cl **85** *SC* **85.8.3.7** *P* **251** *L* **51** # 530

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

85.8.3.7 starts "The reference test fixture printed circuit board insertion loss is given in Equation (85--16)", so this is a reference loss, not a maximum loss.

SuggestedRemedy

In equation 85-16, change the variable "ILtfmax(f)" to "ILtf(f)" (2 places) and also change "is the maximim test fixture insertion loss at frequency f" to "is the reference test fixture insertion loss at frequency f"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.8.4** *P* **252** *L* **22** # 531

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

The Bit error ratio doesn't say min or max.

SuggestedRemedy

Change "Bit error ratio" to "Bit error ratio (maximum)".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add "or better" after 10-12

Cl **85** *SC* **85.8.4** *P* **252** *L* **32** # 532

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

Use naming as per dambrosia_01_0909.pdf

SuggestedRemedy

Change "Differential to common mode conversion SCD11" to "Differential to common mode input return loss". Make the same change in Table 85A-2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response comment#700

Cl **85** *SC* **85.8.4** *P* **252** *L* **32** # 533

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

This has a value of "10 dB max from 50 MHz to 10000 MHz" so a value of say 20 dB would be out of spec.

SuggestedRemedy

Change "10 dB max from 50 MHz to 10000 MHz" to "10 dB min from 50 MHz to 10 GHz". Also, use a non-breaking space (Ctrl Space) between 50 and MHz

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response to comment#700.

Cl **85** *SC* **85.8.4** *P* **252** *L* **33** # 834

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D**

The SCD11 line is all wrong. (SCD11 shouldn't be +10, and differential to common mode return loss should be min not max.

SuggestedRemedy

Change this row to "Differential to Common mode return loss" "10dB min from "

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See response comment#700.

[Editor's note: This comment is against 85.8.4, hence updated the subclause number field accordingly]

Cl **85** *SC* **85.8.4.2** *P* **253** *L* **10** # 761

Misek, Brian Avago Technologies

Comment Type **E** *Comment Status* **D**

Test 1 and 2 are confusing. They are associated with long and short cable channel in other places and called out as high and low loss.

SuggestedRemedy

Change Test 1 to Low Loss and Tes 2 to High Loss

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Test 1 an Test 2 parameters unique to 85.8.4.2.

Cl **85** *SC* **85.8.4.2** *P* **253** *L* **12** # 296

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Root-GHz

SuggestedRemedy

Please use proper square root sign.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Follow style guide.

Cl **85** *SC* **85.8.4.2** *P* **253** *L* **13** # 869

Dudek, Michael QLogic Corporation

Comment Type **T** *Comment Status* **D**

Testing with a short cable rather than the intermediate cable used in test 1 is likely to be more stressful.

SuggestedRemedy

Replace the Test 1 values for a1, a2, and a4 with 1.2, 0.021,0.02 and change the calibrated far end crosstalk for test 1 to 10mV (value comes from 85-33) Also (similar to another comment) add a minimum cable attenuation of 3dB at Nyquist to table 85-9.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
[Editor's note: This comment is against 85.8.4.2, hence updated the subclause number field accordingly]

As the receiver can tolerate more noise with less loss the commenter has not sufficiently demonstrated that the suggested loss creates a more severe tolerance test than Test 1.

For committee discussion.

Cl **85** *SC* **85.8.4.2** *P* **253** *L* **21** # 762

Misek, Brian Avago Technologies

Comment Type **ER** *Comment Status* **D**

"-" is confusing and this is not MDNEXT but "sigma subscript nx"

SuggestedRemedy

Remove "-" and change MDNEXT to "sigma subscript nx"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.8.4.2** *P* **253** *L* **3** # 295

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

"The receiver interference tolerance tests shall be implemented": That's wrong: there should be no requirement to implement tests, only requirements to achieve performance. need to change the sentence more, e.g. "To be compliant the receiver interference tolerance shall satisfy the requirements of 85.8.4.3 to 85.8.4.3.4 with the parameters given in Table 85-7." 85.8.4.3 should be 85.8.4.2.1 . Also, please use proper square root sign in the table.

SuggestedRemedy

Change "The receiver interference tolerance tests shall be implemented using the receiver interference tolerance parameters summarized in Table 85-7." to either:
"The receiver interference tolerance of each lane shall comply with the parameters of Table 85-7 if measured according to the methods of 85.8.4.3 to 85.8.4.3.4." to either:
or:
"Receiver interference tolerance tests is defined by the methods of 85.8.4.3 to 85.8.4.3.4 and the parameters given in Table 85-7." and delete the PICS.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response comment#295

Cl **85** *SC* **85.8.4.2** *P* **253** *L* **3** # 534

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

Subclause 85.8.4.2 says that the test "shall" be done, but does not include pointers to the subclauses that describe the test (which are not subclauses of 85.8.4.2).

SuggestedRemedy

Change "shall be implemented using" to "shall be implemented as defined in 84.8.4.3 using"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change

From: "The receiver interference tolerance tests shall be implemented using the receiver interference tolerance
parameters summarized in Table 85-7." C To: "The receiver interference tolerance tests defined in 85.8.4.3 shall be implemented using the receiver interference tolerance parameters summarized in Table 85-7 for test 1 and test 2."

Cl **85** *SC* **85.8.4.3** *P* **253** *L* **28** # 297

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

This subclause is a part of Receiver interference tolerance test at TP3

SuggestedRemedy

Renumber to 85.8.4.2.1, 85.8.4.3.1 to 85.8.4.2.2, 85.8.4.3.2 to 85.8.4.2.3, 85.8.4.3.3 to 85.8.4.2.4, 85.8.4.3.4 to 85.8.4.2.5.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85** *SC* **85.8.4.3** *P* **253** *L* **37** # 385

Ganga, Ilango Intel Corporation

Comment Type **T** *Comment Status* **D**

[Editor's note: Comment 32 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
FIg 85-6 defines LUT and PGC but you have to read the next section before you know what they are

SuggestedRemedy

Please provide test setup definition in the same section

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response to comment#777.

Cl **85** *SC* **85.8.4.3** *P* **253** *L* **38** # 778

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

Test channel is measured from cable assembly test fixture to cable assembly test fixture and not to the middle of MDI

SuggestedRemedy

Please add 2nd digram showing test channel were it is used for calibration with cable right end terminated to cable assembly test fixture

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
In Figure 85-6 move label MDI over MDI.
Extend hatched line to enclose Tx/Rx PCB, Rx Under Test and Tx. Label hatched rectangle "host under test".

Cl **85** *SC* **85.8.4.3** *P* **253** *L* **38** # 777

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

FIg 85-6 defines LUT and PGC but you have to read the next section before you know what they are

SuggestedRemedy

Please provide test setup definition in the same section as well as definition of LUT and PGG in this section

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. The interference tolerance test is performed with the setup shown in Figure 85-6. The pattern generator connection (PGC) is the test reference for the lane under test (LUT).

Cl **85** *SC* **85.8.4.3** *P* **253** *L* **39** # 386

Ganga, Ilango Intel Corporation

Comment Type **T** *Comment Status* **D**

[Editor's note: Comment 33 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
Why is twinaxial cable requried and why n=4, 10, ...?

SuggestedRemedy

Replace twinaxial cable with "CR4 or CR10 cable assembley"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response to comment#779.

Cl **85** *SC* **85.8.4.3** *P* **253** *L* **39** # 387

Ganga, Ilango Intel Corporation

Comment Type **T** *Comment Status* **D**

[Editor's note: Comment 34 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
Fig 85-6 does not show what showuld be done with cable RX side on the left, open, short, terminate!

SuggestedRemedy

Please show it is terminated to 50 ohms

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Add text subclause 85.8.4.3 Test setup "The cable assembly test fixture receive lanes not connected to receivers are terminated in 100 ohm differentially."

Cl **85** *SC* **85.8.4.3.2** *P* **254** *L* **13** # 695

Healey, Adam LSI Corporation

Comment Type **T** *Comment Status* **D**

In Figure 85-7, the label "HTx" does not make it clear to the reader that this arrow correspond to the 4 (or 10) connectors to the near-end aggressors transmitters that are part of the device under test.

SuggestedRemedy

Update the figure and paragraph starting at line 27 to indicate HTx is the set of lanes that will be connected to 4 or 10 near-end aggressors corresponding to the transmitters of the device under test.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace:"The MDNEXT is measured from points HTx to point LUT in Figure 85-7."

In figure 85-7 change "LUT" at Tx to LUT_Tx and LUT at Rx to LUT_Rx.
In Figure 85-6 change "LUT" at Tx to LUT_Tx.

With:"The MDNEXT is measured from points host transmitters (HTx) to adjacent point LUT_Rx in Figure 85-7. HTx is the set of 4 or 10 transmit lanes of the device under test corresponding to the 4 or 10 near-end crosstalk disturbers."

Update Figure 85-7 to indicate HTx is the set of 4 or 10 transmit lanes of the device under test corresponding to the 4 or 10 near-end crosstalk disturbers.

Cl **85** *SC* **85.8.4.3.2** *P* **254** *L* **254** # 694

Healey, Adam LSI Corporation

Comment Type **T** *Comment Status* **D**

This paragraph states that "the cable assembly test fixture lanes not under test are terminated in 100 Ohms differentially." In fact, it seems the other lanes are connected to aggressor transmitters either associated with pattern generators (FEXT) or the device under test (NEXT). This intended to be a requirement on the terminating impedance presented by those transmitters. If so, the established return loss specifications should be used in their place.

SuggestedRemedy

Remove this sentence. Supplement the requirements with the return loss requirement for the pattern generator (including far-end aggressors) as appropriate.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace:"The cable assembly test fixture lanes not under test are terminated in 100 O differentially."

With:"Cable assembly test fixture lanes not used in the test are terminated in 100 O differentially."

Cl **85** *SC* **85.8.4.3.2** *P* **254** *L* **27** # 535

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

This says "The MDNEXT is measured from points HTx to point LUT in Figure 85--7." but there are two points labelled "LUT" in Figure 85-7.

SuggestedRemedy

Clarify which point marked "LUT" is meant.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment#695

Cl **85** *SC* **85.8.4.3.2** *P* **254** *L* **27** # 388

Ganga, Ilango Intel Corporation

Comment Type **T** *Comment Status* **D**

[Editor's note: Comment 35 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
How is someone suppose to know what this statement means"The MDNEXT is measured from points HTx to point LUT in figure 85-7"!

SuggestedRemedy

This section require more clear write up and more deatil picture

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response to comment#695

Cl **85** *SC* **85.8.4.3.2** *P* **254** *L* **36** # 835

Dudek, Michael QLogic Corporation

Comment Type **E** *Comment Status* **D**

poor English

SuggestedRemedy

replace "each the" with "each of the"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

[Editor's note: This comment is against 85.8.4.3.2, hence updated the subclause number field accordingly]

Cl **85** *SC* **85.8.4.3.2** *P* **254** *L* **39** # 837

Dudek, Michael QLogic Corporation

Comment Type **E** *Comment Status* **D**

poor English

SuggestedRemedy

replace "and host" with "and with the host"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See response comment#697.

[Editor's note: This comment is against 85.8.4.3.2, hence updated the subclause number field accordingly]

Cl **85** *SC* **85.8.4.3.2** *P* **254** *L* **39** # 697

Healey, Adam LSI Corporation

Comment Type **E** *Comment Status* **D**

Terminated in what impedance? Also "host transmitter" should be plural.

SuggestedRemedy

Change last sentence to read "..., and host transmitters (HTx) and PGC terminated in 100 Ohms."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change:"with no signal applied at pattern generator connection (PGC), and host transmitter (HTx) and PGC terminated."
To:"with no signal applied at PGC, and HTx and PGC terminated in 100 ohms."
Clarify text to reflect condition applies to Figure 85-7.

Cl **85** *SC* **85.8.4.3.3** *P* **254** *L* **43** # 696

Healey, Adam LSI Corporation

Comment Type **T** *Comment Status* **D**

It should be made clear that the pattern generator (and aggressor) requirements apply at the test reference, or Pattern Generator Connection (PGC), as shown in Figure 85-6.

SuggestedRemedy

Add a statement at the beginning of 85.8.4.3.3 that states the requirements of this subclause are verified at the PGC.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add sentence page 253 line 28-29 : "The requirements of this subclause are verified at the pattern generator connection (PGC) or test reference."

Cl **85** *SC* **85.8.4.3.3** *P* **254** *L* **44** # 698

Healey, Adam LSI Corporation

Comment Type **T** *Comment Status* **D**

Rise and fall times are not defined in this clause. A reference should be provided.

SuggestedRemedy

Change sentence to read: "The rise and fall times of the pattern generator, as defined in 72.7.1.7, are 47 ps."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Replace:" Its rise and fall times
should be no less than 47 ps"
With:" The rise and fall times of the pattern generator, as defined in 72.7.1.7, are 47 ps."

Cl **85** *SC* **85.8.4.3.3** *P* **254** *L* **45** # 783

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

The rise and fall time test patter not provided and definition

SuggestedRemedy

Rise and fall times are measured with pattern of 8 ones and 8 zeros from 20-80%.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See response to comment#698.

Cl **85** *SC* **85.8.4.3.4** *P* **255** *L* **11** # 838

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D**

No mention is made of what amplitude the Tx channels should be at.

SuggestedRemedy

insert "at maximum amplitude" between"PRBS31" and "with"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

[Editor's note: This comment is against 85.8.4.3.4, hence updated the subclause number field accordingly]

Page 255, line 11
Change:"with equalization turned off (preset condition)."
To: with maximum compliant amplitude and equalization turned off (preset condition).

Cl **85** *SC* **85.8.4.3.4** *P* **255** *L* **9** # 637
Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**
Shall statement does not include corresponding pic statement.

SuggestedRemedy
add PIC

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.
Insert PIC between RS1 and RS2; reorder list. Feature=Receiver tolerance,Subclause=85.8.4.3, value/comment= BER better than 10-12, status=M, Support=Yes[ ].

Cl **85** *SC* **85.8.4.3.4** *P* **255** *L* **9** # 536
Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**
The reference 86.8.8.2 does not exist.

SuggestedRemedy
Change "86.8.8.2" to "86.8.2" and make it a link.

Proposed Response *Response Status* **W**
For clause 86

Cl **85** *SC* **85.84.3** *P* **253** *L* **38** # 782
Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**
Fig 85-6 will improve if RX Under test show one lane under test as well as TX on the right all lanes active

SuggestedRemedy
Please implement the suggestion

Proposed Response *Response Status* **W**
PROPOSED REJECT.
Figure 85-7 provides the additional details requested.

Cl **85** *SC* **85.84.3** *P* **253** *L* **38** # 779
Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**
The cable assembly should be CR4/CR10 and not n pairs of Twinaxial cable n=4,10, etc

SuggestedRemedy
Replace with CR4/CR10 cable assembly

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE. Change: Figure 85-6 and Figure 85-7
n pair
Twinaxial cable
n=4,10,.
To: cable assembly 4x or 10x consistent with Figure 85-2.

Cl **85** *SC* **85.84.3** *P* **253** *L* **38** # 781
Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**
Fig 85-6 is missing load on the left side

SuggestedRemedy
Please add load to the left of the figure terminating all lanes

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.
Add:"The cable assembly test fixture receive lanes lanes are terminated in 100 O differentially."

Cl **85** *SC* **85.84.3.2** *P* **254** *L* **13** # 780
Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**
The cable assembly should be CR4/CR10 and not n pairs of Twinaxial cable n=4,10, etc

SuggestedRemedy
Replace with CR4/CR10 cable assembly

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.
See response to comment#779.

Cl **85** *SC* **85.84.3.2** *P* **254** *L* **23** # 646

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

4 SHALL statements in 85.8.4.3.2 and 85.8.4.3.3 with no corresponding PICS

SuggestedRemedy

add PICs

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85A** *SC* **85A.2** *P* **415** *L* **15** # 699

Healey, Adam LSI Corporation

Comment Type **T** *Comment Status* **D**

By intent, the transmitter characteristics at TP0 are identical to the 10GBASE-KR transmitter characteristics and as a result most of this table duplicates a similar table in Clause 72. It would be simpler to just reference Clause 72 and note the exceptions.

SuggestedRemedy

Change to read "Transmitter electrical characteristics at TP0 for 40GBASE-CR4 and 100GBASE-CR10 are the same as 10GBASE-KR transmitter characteristics at TP1, as defined in 72.7.1.1 through 72.7.1.11. In addition, the common-mode AC output voltage at TP0 should not exceed 30 mV RMS." Delete Table 85A-1.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

TP0 and TP5 are 40GBASE-CR4 and 100GBASE-CR10 test points. The purpose of Annex 85A is to provide information on parameters associated with test points TP0 and TP5 including transmitter characteristics at TP0.

Cl **85A** *SC* **85A.2** *P* **415** *L* **28** # 596

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

In Table 85A-1 the "Differential peak-to-peak output voltage (max.) with TX disabled" refers to 72.6.5 which is the "PMD transmit disable function". This doesn't seem very helpful. It would be better to use the same reference as Table 85-4

SuggestedRemedy

Change "72.6.5" to "85.8.3.3"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85A** *SC* **85A.2** *P* **415** *L* **40** # 856

Dudek, Michael QLogic Corporation

Comment Type **T** *Comment Status* **D**

This is actually 85A. Clarification of the Jitter parameter test method would be helpful here

SuggestedRemedy

Add footnote c to the "max output jitter" row. Footnote c to say "Jitter is measured with emphasis off".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
[Editor's note: This comment is against 85A.2, hence corrected clause/subclause number fields to 85A]
Recommended footnote is insufficient as clarification of jitter parameter test method. For committee discussion.

Cl **85A** *SC* **85A.3** *P* **416** *L* **1** # 700

Healey, Adam LSI Corporation

Comment Type **T** *Comment Status* **D**

By intent, the receiver characteristics at TP5 are identical to the 10GBASE-KR receiver characteristics and as a result most of this table duplicates a similar table in Clause 72. It would be simpler to just reference Clause 72 and note the exceptions. Also note that the frequency range for SCD11 is inconsistent with the frequency range used to specify other S-parameters and should be updated.

SuggestedRemedy

Change to read "Receiver electrical characteristics at TP5 for 40GBASE-CR4 and 100GBASE-CR10 are the same as 10GBASE-KR, as defined in 72.7.2.2 through 72.7.2.5. In addition Differential to common mode conversion SCD11 should not exceed -10 max from 50 MHz to 7.5 GHz." Delete Table 85A-2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

In Table 85-6 and Table 85A-2 for SCD11
change parameter name: From "Differential to common mode conversion SCD11"
To:Differential to common mode input return loss

In Table 85-6 change:"10 dB max from 50 MHz to 10000 MHz"
To:"10 min from 50 MHz to 10 GHz"

In Table 85A-2 change:"-10 max from 0.01 to 11.1 GHz"
To:"10 min from 50 MHz to 10 GHz"

TP0 and TP5 are 40GBASE-CR4 and 100GBASE-CR10 test points. The purpose of Annex 85A is to provide information on parameters associated with test points TP0 and TP5 including receiver characteristics at TP5.

Cl **85A** *SC* **85A.3** *P* **416** *L* **22** # 597

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

"-10 max from 0.01 to 11.1 GHz" should be "-10 max from 0.01 GHz to 11.1 GHz" to comply with the style manual.

SuggestedRemedy

Change "from 0.01 to 11.1 GHz" to "from 0.01 GHz to 11.1 GHz" .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment#700

Cl **85A** *SC* **85A.4** *P* **416** *L* **30** # 335

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Proposed wordsmithing

SuggestedRemedy

Change "Based on 85.8.3.4 insertion loss TP0 to TP2 or TP3 to TP5 and..." to "With the insertion loss from TP0 to TP2 or TP3 to TP5 given in 85.8.3.4 and...

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85A** *SC* **85A.4** *P* **416** *L* **30** # 336

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

Draft says "an assumed connector loss of 1.74 dB". I thought the allowed connector loss was 0.87 dB. If a single mated connection had that much loss, wouldn't there be a problem with its reflections? Also, text is not clear whether this is the loss of one mated connection, or, as in the rest of this paragraph, the sum of Tx side and Rx side losses.

SuggestedRemedy

Either change "an assumed connector loss of 1.74 dB" to "an assumed loss of ? dB for two MDI connectors" or (preferred) "an assumed loss of ? dB per MDI connector".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Based on 85.8.3.4 insertion loss TP0 to TP2 or TP3 to TP5 and an assumed loss of 1.74 dB for mated plug and receptacle.

Resolve with comment#335.

Cl **85A** *SC* **85A.4** *P* **416** *L* **33** # 337
Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**
Missing closing bracket

SuggestedRemedy
the MDI host receptacle) are determined

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **85A** *SC* **85A.4** *P* **416** *L* **33** # 598
Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**
There is a close bracket missing from the end of line 33

SuggestedRemedy
Change "Equation (85A-1)." to "Equation (85A-1))."

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE. Close bracket after receptacle (i.e., the maximum value of the sum of the insertion losses from TP0 to the MDI host receptacle and from TP5 to the MDI host receptacle)

Cl **85A** *SC* **85A.4** *P* **416** *L* **35** # 857
Dudek, Michael QLogic Corporation

Comment Type **ER** *Comment Status* **D**
This is actually 85A It would be less confusing if the sentence at line 53 were added at the end of the paragraph at line 35.

SuggestedRemedy
Move the sentence.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

[Editor's note: This comment is against 85A.4, hence corrected clause/subclause number fields to 85A]

Move sentence to end of the paragraph at line 35.:" The maximum insertion loss for the transmitter or the receiver differential controlled impedance printed circuit board is one half of the maximum insertion loss..

Cl **85A** *SC* **85A.4** *P* **416** *L* **37** # 599
Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**
In Equation 85A-1 "(0.30)" should not have a trailing zero.

SuggestedRemedy
Change "(0.30)" to "(0.3)"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **85A** *SC* **85A.4** *P* **416** *L* **44** # 600
Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**
In the where section of Equation 85A-1, "ILPCB(f) is the maximum insertion loss for the transmitter and receiver PCB" should not be the maximum. That is ILPCBmax(f)

SuggestedRemedy
Change to "ILPCB(f) is the insertion loss for the transmitter and receiver PCB" Make the equivalent change for "minimum" in the where section of Equation 85A-2

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **85A** *SC* **85A.4** *P* **416** *L* **44** # 858
Dudek, Michael QLogic Corporation

Comment Type **T** *Comment Status* **D**
This is actually 85A ILpcb is not the maximum

SuggestedRemedy
delete "maximum". Add a row that defines ILpcbmax

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

Change:"is the maximum insertion loss for the transmitter and receiver PCB"
To:"is the insertion loss for the transmitter and receiver PCB"
Add: ILPCBmax(f) is the maximum insertion loss for the transmitter and receiver PCB"

[Editor's note: This comment is against 85A.4, hence corrected clause/subclause number fields to 85A]

Cl **85A** *SC* **85A.4** *P* **416** *L* **46** # 601

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

In the where section of Equation 85A-1, "b1" should be in italic font.

SuggestedRemedy

Change "b1" to italic

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85A** *SC* **85A.4** *P* **417** *L* **13** # 860

Dudek, Michael QLogic Corporation

Comment Type **T** *Comment Status* **D**

This is actually 85A ILpcb is not the minimum

SuggestedRemedy

Change ILpcb to ILpcbmin

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
[Editor's note: This comment is against 85A.4, hence corrected clause/subclause number fields to 85A]

Cl **85A** *SC* **85A.4** *P* **417** *L* **5** # 859

Dudek, Michael QLogic Corporation

Comment Type **ER** *Comment Status* **D**

This is actually 85A It would be less confusing if the sentence at line 15 were added at the end of the paragraph at line 5

SuggestedRemedy

Move the sentence.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Move sentence to end of the paragraph at line 5" The minimum insertion loss for the transmitter or the receiver differential controlled impedance printed circuit board is one half of the minimum insertion loss...

[Editor's note: This comment is against 85A.4, hence corrected clause/subclause number fields to 85A]

Cl **85A** *SC* **85A.4** *P* **418** *L* **25** # 275

Trowbridge, Stephen ALCATEL-LUCENT

Comment Type **ER** *Comment Status* **D**

The title "Figure 85A-1- Illustration channel insertion loss budget" " does not indicate the reference frequency.

SuggestedRemedy

Change title to: "Figure 85A-1- Illustration channel insertion loss budget at 5.15625 GHz"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Page 487- line 1: Change: The channel insertion loss budget is illustrated in Figure 85A-1.
To: The channel insertion loss budget at 5.15625 GHz is illustrated in Figure 85A-1.

Change title to: "Figure 85A-1- Illustration channel insertion loss budget at 5.15625 GHz"

Cl **85A** *SC* **85A.5** *P* **417** *L* **32** # 861

Dudek, Michael QLogic Corporation

Comment Type **T** *Comment Status* **D**

This is actually 85A ILca is not the maximum

SuggestedRemedy

delete "maximum". Also delete the row on line 48 as this quantity is already defined here.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
[Editor's note: This comment is against 85A.5, hence corrected clause/subclause number fields to 85A]

Page 417, line 32 for ILCh(f) delete maximum
Page 417, line 48 for ILCh(f) delete minimum.
Page 417, line 49 for delete ILCamax(f) definition.

Cl **85A** *SC* **85A.5** *P* **417** *L* **38** # 862

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D**

This is actually 85A This doesn't make sense. Where does the 0.2*max cable assembly loss come from? Why is the maximum host lost being used in an equation defining the minimum channel loss?

SuggestedRemedy

Add a normative minimum cable loss requirement to table 85-9 and change the title to "Cable assembly insertion loss characteristics. Add one row. Minimimum insertion loss at 5.156.... 3.0dB. Then use this minimimum insertion loss and the minimum host loss (instead of max) in the equation.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
[Editor's note: This comment is against 85A.5, hence corrected clause/subclause number fields to 85A]

Add paragraph page 417, line 20: "85A.5 provides information on channel insertion losses for intended topologies ranging from 0.5 m to 7 m in length. The maximum channel insertion loss associated with the 7 m topology is determined using Equation (85A-3).
The channel insertion loss associated with the 0.5 m topology and a maximum host channel is determined by Equation (85A-4)."

In equation 85A-4 Change: .2 to 0.275 to account for fixture loss.
Change:"The minimum channel insertion loss between TP1 and TP4 is determined using Equation (85A-4).

To:"The channel insertion loss between TP0 and TP5 representative of 0.5 m cable assembly and a maximum host channel is determined using Equation (85A-4)."

Change: ILCh(f) is the maximum channel insertion loss between TP1 and TP4 .

To: ILCh(f) is the maximum channel insertion loss between TP0 and TP5

In Equation 85A-3
delete "ILCh(f) "
In Equation 85A-4
delete "ILCh(f) "
In Equation 85A-4
Replace: "ILChmin(f)"
With:"ILCh_0.5m(f)="

Cable assemblies that meet 85.10 don't require normative minimum insertion loss specification.

Resolve with comment#776 and comment#770.

Cl **85A** *SC* **85A.5** *P* **417** *L* **40** # 602

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

Equation 85A-4 starts with a spurious "("

SuggestedRemedy

Change "(ILCh(f)" to "ILCh(f)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85A** *SC* **85A.6** *P* **418** *L* **31** # 863

Dudek, Michael QLogic Corporation

Comment Type **T** *Comment Status* **D**

This is actually 85A The wording is strange. "Determined using equation" sounds like a mathematical certitude.

SuggestedRemedy

Replace "is determined using equation". With "is recommended to meet equation".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change:"The return loss of each lane of the 40GBASE-CR4 or 100GBASE-CR10 channel is determined using Equation
(85-25)."
To:"The return loss of each lane of the 40GBASE-CR4 or 100GBASE-CR10 channel is recommended to meet the values determined using Equation
(85-25)."

[Editor's note: This comment is against 85A.6, hence corrected clause/subclause number fields to 85A]

Cl **85A** *SC* **85A.7** *P* **418** *L* **40** # 603

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

Equation 85A-5 should have units of "(dB)"

SuggestedRemedy

Add "(dB)". Also, "ILCh(f)" should be in the where section.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **85A** *SC* **85A.7** *P* **419** *L* **1** # 864

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D**

This is actually 85A. You can't have a shall statement in an informative clause.

SuggestedRemedy

Replace "shall be" with "is recommended to be"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. [Editor's note: This comment is against 85A.7, hence corrected clause/subclause number fields to 85A]

Cl **86** *SC* **86** *P* **279** *L* **1** # 889

Maki, Jeffery Juniper Networks, Inc.

Comment Type **T** *Comment Status* **D** *LR4*

The specification for 40GBASE-SR4 should be updated to align with any required change in 40GBASE-LR4 such that a common host implementation can be made.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Only if the changes are not onerous for SR4. See responses to comments 792 793 814 816 and 886.

Cl **86** *SC* **86.1** *P* **279** *L* **12** # 141

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D** *Cl84 Cl85*

Table like 86-1 is missing from copper clauses 84 and 85.

SuggestedRemedy

Add tables similar to table 86-1 to clauses 84 and 85.

Proposed Response *Response Status* **W**

PROPOSED REJECT. [Editor's note: Page and line numbers reversed]
For 84: such a table is not applicable for back-plane and in any case the channel is described in Clauses 69, 69A and 69B.
For 85: requested table seems redundant as parameter entries are addressed in appropriate subclauses e.g., media type, number of lanes, operating range, and signaling rate.

Cl **86** *SC* **86.1** *P* **279** *L* **20** # 349

Kolesar, Paul CommScope Solutions

Comment Type **TR** *Comment Status* **D** *SRreach*

The operating range can be increased without change to the transceiver specifications by utilizing prevelant low-loss connection technology. For a connection loss allocation of 1.0 dB, the upper end of the ranges can increase to 120 m for OM3 and 150 m for OM4. Note that accepting this comment produces ripple effects in other parts of clause 86 that are addressed in subsequent comments.

SuggestedRemedy

Change
"0.5 to 100 for OM3 or 125 for OM4"
to
"0.5 to 120 for OM3 or 150 for OM4".

Proposed Response *Response Status* **W**

PROPOSED REJECT. The objective is 100 m. There is no objective for two additional optical channel specs.
Longer distances may be achievable with reduced connector loss, but this would incur additional penalties (note that this is a jitter-limited link). Changing the max reach from 100m of OM3 to 120m would increase the TDP limit by about 0.25 dB since the fiber is included in the TDP calculation but the connector loss is not. With this adjustment the Rx BW for equivalent penalties in the TDP test would be 5.7 GHz rather than the current 6.2 GHz. A second TDP test and equivalently a second receiver stressed eye would add cost, and in practice mean a second PMD.

Cl **86** *SC* **86.1** *P* **279** *L* **20** # 356

Abbott, John Corning Inc.

Comment Type **TR** *Comment Status* **D** *SRreach*

Table 86-1 p.279 The 0.5 to 100m operating range is too broad and should be divided into 2 PMDs, a 0.5 to ~75m for computer interconnects and a ~75m to 150m range for data centers (both with OM3). The 802.3ae length is 300m and supports 150-250m lengths in data centers. The 802.3ba uses MM fiber to take up shorter lengths previously using copper - a distinct PMD -- and the specific applications for OM3 and OM4 fiber warrant 2 PMDs.

SuggestedRemedy

Organize SR into two PMDs as similar as possible but allowing one to focus on lengths currently used for optical fiber in the data center and the other to focus on HPC applications.

Proposed Response *Response Status* **W**

PROPOSED REJECT. The objective is 100 m. With this objective, two MMF PMDs at each MAC rate are not required.

Cl **86** *SC* **86.1** *P* **279** *L* **23** # 7

Maguire, Valerie The Siemon Company

Comment Type **G** *Comment Status* **D** *4*

Add reference to TIA Standard specifying OM3 performance

SuggestedRemedy

Change "Type A1a.2 (OM3) specified in IEC 60793-2-10. See 86.10.2.1" to "Type A1a.2 (OM3) specified in IEC 60793-2-10 and ANSI/TIA-568.C.3. See 86.10.2.1"

Proposed Response *Response Status* **W**

PROPOSED REJECT. Policy is to reference international standards only, unless they are inadequate.

Cl **86** *SC* **86.1** *P* **279** *L* **28** # 139

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

These two PMDs are very similar. - strike this one out. They are different after all, since there are different definitions of PMDs.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. [Editor's note: Page and line numbers reversed]
They are very similar, differing only in number of lanes. But the sentence is not necessary.

Cl **86** *SC* **86.1** *P* **279** *L* **30** # 140

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D** *Cl80 Cl83*

40GBASE--SR4 uses four identical lanes, while 100GBASE--SR10 uses ten of the same lanes. In this clause, where there are four or ten itemsare these PCS lanes or PMD lanes? This needs to be spelled out clearly.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT. [Editor's note: Page and line numbers reversed]
Table 86-1 tells the reader the number of lanes and the signalling rate of a lane, so the draft is unambiguous. The PMD connects to the PMA, not the PCS. There is no need to confuse the PMD implementer with mention of PCS lanes; any lack of clarity should be fixed in the introductory clause and the PMA clause.

Cl **86** *SC* **86.1** *P* **280** *L* **7** # 138

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

Strike " (terminology and conventions, references, definitions and abbreviations) " and "(bibliography, referenced as [B1], [B2], etc.)" - references are sufficient for a reader with access to 802.3 base standard.

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT. [Editor's note: Page and line numbers reversed]
This provides reference to important material once in the clause, for readers who do not read standards from the front. The front is thousands of pages away in a different file. Terminology, conventions, definitions and abbreviations don't have references in the clause of use.

Cl **86** *SC* **86.10.1** *P* **296** *L* **45** # 129

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

Per Figure 86-5, what are the numbers (4 or 10) which are used on the figure? Do they denote lanes, fibres, cable bundles etc.?

SuggestedRemedy

Clarify what the "4 or 10" refers to on Figure 86-5

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. [Editor's note: Page and line numbers reversed]
Move text beginning p297 line 24, "The fiber optic cabling (channel) contains 4 or 10 optical fibers ... any receiver lane." to p296 line 35.

Cl **86** *SC* **86.10.1** *P* **297** *L* **23** # 357

Kolesar, Paul CommScope Solutions

Comment Type **T** *Comment Status* **D**

The second edition of IEC 61280-4-1 has been pubished for several months. As indicated in the editor's note, the referenced test should be harmonized with this new edition. However, the directions in the editor's note do not capture the changes completely nor in the most concise way. This is remedied in the proposed change.

SuggestedRemedy

Change
"Insertion loss measurements of installed fiber cables are
made in accordance with IEC 61280-4-1/Method 2 or IEC 61280-4-1/Method 3."
to
"Insertion loss measurements of installed fiber cables are
made in accordance with the methods for cabling configuration A of IEC 61280-4-1."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change
"Insertion loss measurements of installed fiber cables are made in accordance with IEC 61280-4-1/Method 2 or IEC 61280-4-1/Method 3."
to
"Insertion loss measurements of installed fiber cables are made in accordance with IEC 61280-4-1:2009."
Comment 562 addresses same sentence.

Cl **86** *SC* **86.10.1** *P* **297** *L* **27** # 561

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

In "As defined in clause 86.10.3," "86.10.1" should be a link and "clause" is not required.

SuggestedRemedy

Change to "As defined in 86.10.1" and make "86.10.1" a link

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Delete "clause", make "86.10.3" a link (86.10.1 was a typo).

Cl **86** *SC* **86.10.1** *P* **297** *L* **29** # 562

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

Since Ed 2.0 of IEC 61280-4-1 is now published (See http://webstore.iec.ch/webstore/webstore.nsf/artnum/043082) update text and remove Editor's note.

SuggestedRemedy

Change the text to refer to the new Annexes and remove the Editor's note. However, subclause 68.8 contains "with IEC 61280-4-1/Method 2." This will mean that we need to add a dated reference for IEC 61280-4-1 2009 here and in 1.3.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Remove the editor's note. See response to comment 357 for change to text. See comment 283 for entry in 1.3 Normative references.

Cl **86** *SC* **86.10.1** *P* **297** *L* **3** # 128

Hajduczenia, Marek ZTE Corp.

Comment Type **ER** *Comment Status* **D**

Table 86-13 is located inside of the text block, cutting sentences in the middle. Please place the anchor in the proper location and set the orphan sentences accordingly. Similar problems with Figure 86-4, page 294/48; Figure 86-2, page 298/51; Table 86-2, page 279/32

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. [Editor's note: Page and line numbers reversed] Apparently the "number of orphan lines" control doesn't correct this as expected. Fix by hand if straightforward to do so.

Cl **86** *SC* **86.10.2.1** *P* **297** *L* **38** # 132

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

The fiber contained within the 40GBASE--SR4 or 100GBASE--SR10 fiber optic cabling change to read "The fiber used for the 40GBASE--SR4 or 100GBASE--SR10 fiber optic cabling "

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT. [Editor's note: Page and line numbers reversed]
The commenter has withdrawn this comment.
The proposed change is not an improvement as it implies that the requirements only have to be met at the time of installation.
The current text was inserted by comment 519 against draft 1.0

Cl **86** *SC* **86.10.2.1** *P* **297** *L* **8** # 352

Kolesar, Paul CommScope Solutions

Comment Type **TR** *Comment Status* **D** *SRreach*

*** Comment submitted with the file 41773000024-d3_0_comment_Table86-13.xls attached ***

Table 86-13 should be modified to show channel characteristics for both the 1.5 dB and 1.0 dB connection loss cases. Providing both cases carries the legacy 1.5 dB loss case while simultaneously defining the lower loss 1.0 dB case that offers enhanced distance capability in trade.

SuggestedRemedy

Change Table 86-13 as proposed in the attached file "d3_0_comment_Table86-13.xls".

Proposed Response *Response Status* **W**

PROPOSED REJECT. There is no objective for two additional optical channel specs.
See response to comment 349.

Cl **86** *SC* **86.10.2.2.1** *P* **297** *L* **50** # 257

Cobb, Terry CommScope Solutions

Comment Type **T** *Comment Status* **D** *SRreach*

By using low loss connectors the distance for OM3 can be increased to 125m and OM4 to 150m. This requires no changes to anything else in the document and essentially comes free. These low loss connectors are available from many manufactures.

SuggestedRemedy

Change 86.10.2.2.1 Connection insertion loss to read:
The operating link distances in the tables is based on an allocation of 1.5 dB total connection and splice loss. For example, this allocation supports two connections, each with an insertion loss of 0.75 dB. However, the loss of a single connection shall not exceed 0.75 dB.
Connections with lower loss characteristics may be used provided the requirements of Table 86-14 are met. By reducing the connection and splice loss from 1.5 dB to 1.0 dB the operating distance for OM3 can be extended to 120 meters and the operating distance for OM4 can be extended to 150 meters.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. There is no objective for two additional optical channel specs. However, the comment reveals confusion between operating distance (MDI to MDI) and link distance (connection to connection in Figure 86-5). Change "The maximum link distance" to "The maximum operating distance".
Longer distances may be achievable with reduced connector loss, but this would incur additional penalties (note that this is a jitter-limited link). Changing the max reach from 100m of OM3 to 120m would increase the TDP limit by about 0.25 dB since the fiber is included in the TDP calculation but the connector loss is not. With this adjustment the Rx BW for equivalent penalties in the TDP test would be 5.7 GHz rather than the current 6.2 GHz. A second TDP test and equivalently a second receiver stressed eye would add cost, and in practice mean a second PMD.

Cl **86** *SC* **86.10.2.2.1** *P* **297** *L* **50** # 353

Kolesar, Paul CommScope Solutions

Comment Type **TR** *Comment Status* **D** *SRreach*

Modify the text to recognize the addition of the proposed 1.0 dB insertion loss case for connection and splice loss. This comment also harmonizes the text with the description used in Table 86-13 by replacing "maximum link distance" with "maximum operating distances".

SuggestedRemedy

Change:
"The maximum link distance is based on an allocation of 1.5 dB total connection and splice loss. For example, this allocation supports two connections, each with an insertion loss of 0.75 dB."
to
"The maximum operating distances are based on allocations of 1.0 dB or 1.5 dB total connection and splice loss. For example, these allocations support two connections, each with an insertion loss of 0.5 dB or 0.75 dB respectively."

Proposed Response *Response Status* **W**

PROPOSED REJECT. Without an additional reach objective, there is no need for an alternative connection and splice loss allocation.
See response to comment 349.
For link distance vs. operating distance, see response to comment 257.

Cl **86** *SC* **86.10.2.2.1** *P* **298** *L* **18** # 8

Maguire, Valerie The Siemon Company

Comment Type **G** *Comment Status* **D** *4*

Add reference to TIA Standard specifying OM3 performance

SuggestedRemedy

Change "IEC 60793-2-10 type A1a.2" to "IEC 60793-2-10 type A1a.2 and ANSI/TIA-568.C.3"

Proposed Response *Response Status* **W**

PROPOSED REJECT. See response to comment 7.

Cl **86** *SC* **86.10.3.2** *P* **299** *L* **50** # 364

Frazier, Howard M Broadcom

Comment Type **TR** *Comment Status* **D**

"arranged in two rows of at least 10 or 12 positions." is vague and there is no justification for a minimum of 12.

SuggestedRemedy

Replace with "...arranged in two rows of at least 10 positions."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **86** *SC* **86.10.3.2** *P* **299** *L* **52** # 302

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

In the previous line we have "optical lanes" twice but here we have "optical signal lanes".

SuggestedRemedy

Delete "signal".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **86** *SC* **86.11.3** *P* **302** *L* **15** # 563

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

Items *TP1 and *TP4 are for when compliance points TP1 or TP4 are exposed. This may be with an electrical interface other than that defined in Annex 86A, so it is not appropriate to list "Annex 86A" in the Value /Comments for these items.

SuggestedRemedy

Remove "Annex 86A" from *TP1 and *TP4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. For discussion: note related comment 474 against 83.5.1.
If an optional interface gives the implementer the options of implementing the (exposed and testable) interface, or not implementing an exposed and testable interface, but no other option - reject the comment.
If the implementer has the third option of implementing an exposed but non-compliant interface - remove "Annex 86A" from *TP1 and *TP4,
under TP4, create two major options,
*PIT nPPI Tx interface 86.1 Uses XLPPI or CPPI host to module (see 86A) TP1:O Yes/No
*PIR nPPI Rx interface 86.1 Uses XLPPI or CPPI module to host (see 86A) TP4:O Yes/No

Cl **86** *SC* **86.11.4.1** *P* **303** *L* **12** # 647

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

PIC SF2 is in regards to integration with management functions, but there is no corresponding SHALL statement - "A PMD is optionally connected to the management functions that may be accessible through the management interface defined in Clause 45."

SuggestedRemedy

add SHALL statement.

Proposed Response *Response Status* **W**

PROPOSED REJECT. SF2 is included in the PICS table for the purpose of recording which options have been implemented rather than to confirm compliance with a particular requirement. Consequently it is not appropriate to have a "shall" statement in the text for this item.
In the same way, there is no "shall" statement corresponding to SR, LR, ER, etc. in the clause 52 PICS.

Cl **86** *SC* **86.11.4.1** *P* **303** *L* **14** # 648

Dambrosia, John Force 10 Networks Inc

Comment Type **E** *Comment Status* **D**

values for D, SF3 - SF5 are blank

SuggestedRemedy

List values for D, SF3 - SF5

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. The Skew and Skew Variation at SP2 (TP1) are input conditions for the PMD, not something it can control. Delete SF3 and renumber other "SF" PICS. If it fits within 2 lines in the cell, insert "SR4, max 1024 BT (2 pause_quanta, 25.6 ns). SR10, max 2048 BT (4 pause_quanta, 20.48 ns)."
"At SP3, less than 54 ns, 600 ps. At SP4, less than 134 ns, 3.4 ns."
"If measurable, less than 145 ns, 3.6 ns.".
Insert long dashes or "See text" in otherwise empty table cells. There is no need to use the Value/Comment cells; the reader must read the subclause anyway.

Cl **86** *SC* **86.11.4.2** *P* **304** *L* **15** # 650

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

What is the corresponding SHALL statement for this PIC? There is one SHALL statement that corresponds to SM3

SuggestedRemedy

add SHALL statement

Proposed Response *Response Status* **W**

PROPOSED REJECT. The relevant text is "an alternative method may be provided to independently disable each transmit lane.". SM4 is included in the PICS table for the purpose of recording which options have been implemented rather than to confirm compliance with a particular requirement. Consequently it is not appropriate to have a "shall" statement in the text for this item.
In the same way, there is no "shall" statement corresponding to SR, LR, ER, etc. in the clause 52 PICS.

Cl **86** *SC* **86.11.4.2** *P* **304** *L* **6** # 649

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

No corresponding SHALL statements to subclauses referenced for SM1

SuggestedRemedy

add SHALL statement

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change "Mapping of MDIO control variables to PMD control variables is shown in Table 86-3. Mapping of MDIO status variables to PMD status variables is shown in Table 86-4." to "If MDIO is implemented, the mapping of MDIO control variables to PMD control variables shall be as shown in Table 86-3, and the mapping of MDIO status variables to PMD status variables shall be as shown in Table 86-4." Insert "See subclause" in Value/Comment field. In addition, change "86.11.4.3 Electrical and optical specifications for 40GBASE-SR4 or 100GBASE-SR10" to "86.11.4.3 Optical specifications"

Cl **86** *SC* **86.11.4.4** *P* **305** *L* **11** # 652
Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

No corresponding SHALL statement for SOM4

SuggestedRemedy

add SHALL statement

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Either, in 86.8.4.3, change "OMA is as defined" to "OMA shall be as defined", or delete this PICS. See also comments 662 (87.12.4.4 XLOM5) and 668 (88.12.4.5 COM4).

Cl **86** *SC* **86.11.4.4** *P* **305** *L* **13** # 653
Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

No corresponding SHALL statement for SOM5

SuggestedRemedy

add SHALL statement

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. In 86.8.4.4 TDP, change "is as defined" to "shall be as defined". Make equivalent changes in 87 and 88.

Cl **86** *SC* **86.11.4.4** *P* **305** *L* **15** # 654
Dambrosia, John Force 10 Networks Inc

Comment Type **E** *Comment Status* **D**

For SOM6 the value cited is for the test methology, but not the limits that are given in Table 86-12

SuggestedRemedy

add reference to limits being in Table 86-12 in Value comment for SOM6

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Extinction ratio is used both for transmitter and receiver (each has its own PICS), so 86.8.4.5 should address the test methodology only. In 86.8.4.5, change "Extinction ratio shall be within the limits given in Table 86-6 if measured using the methods specified in IEC 61280-2-2 using the test pattern defined in Table 86-12." to "Extinction ratio is defined by the methods of IEC 61280-2-2, using the test pattern defined in Table 86-12."

Cl **86** *SC* **86.11.4.4** *P* **305** *L* **18** # 655
Dambrosia, John Force 10 Networks Inc

Comment Type **E** *Comment Status* **D**

For SOM8 the value cited is for the test methodology, but not the limits that are given in Table 86-8

SuggestedRemedy

add reference to limits being in Table 86-8 in Value comment for SOM8

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change "Each lane, per 52.9.9 as modified" to "See 86.8.4.7".

Cl **86** *SC* **86.11.4.4** *P* **305** *L* **20** # 656
Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

No corresponding SHALL statement for SOM9 PIC

SuggestedRemedy

add SHALL statement

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. In 86.8.4.8 Receiver jitter tolerance, change "is as defined" to "shall be as defined".

Cl **86** *SC* **86.11.4.4** *P* **305** *L* **9** # 651
Dambrosia, John Force 10 Networks Inc

Comment Type **E** *Comment Status* **D**

For SOM3 the value cited is for the test methodology, but not the limit that needs to be met, which is per limits given in Table 86-6

SuggestedRemedy

Add reference to limits being in Table 86-6 in Value comment for SOM3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Average power is used in several tables, which have their own PICS where necessary, so 86.8.4.2 should address the test methodology only. In 86.8.4.2, change "The average optical power of each lane shall be within the limits given in Table 86-6 if measured using the methods given in IEC 61280-1-1." to "Average optical power is defined by the methods given in IEC 61280-1-1."

Cl **86** *SC* **86.11.4.5** *P* **305** *L* **32** # 657

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

No corresponding SHALL statement for SES3 PIC

SuggestedRemedy

add SHALL statement

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. The "shall"s are in the referenced 52.11, which is a mixture of requirements and recommendations so cannot simply add a "shall" here. See 68.7.3 for precedent. Change "Complies with applicable local and national codes for the limitation of electromagnetic interference" to "As 52.11. Complies with codes for limitation of electromagnetic interference".

Cl **86** *SC* **86.11.4.6** *P* **306** *L* **18** # 564

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

For item SO6 the reference should be "86.10.3.2" rather than "86.10.3.1"

SuggestedRemedy

Change "86.10.3.1" to "86.10.3.2"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **86** *SC* **86.11.4.6** *P* **306** *L* **18** # 659

Dambrosia, John Force 10 Networks Inc

Comment Type **ER** *Comment Status* **D**

Reference to subclause is incorrect, as it should be to 86.10.3.2.

SuggestedRemedy

change subclause reference to 86.10.3.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Same as comment 564.

Cl **86** *SC* **86.11.4.6** *P* **306** *L* **6** # 658

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

No corresponding SHALL statement for SOC1 PIC

SuggestedRemedy

add SHALL statement

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change "The channel insertion loss is given in Table 86-13." to "The channel shall comply with the specifications in Table 86-13.".

Cl **86** *SC* **86.4** *P* **282** *L* **31** # 133

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

Why is "Transmit disable 9" separated from "Transmit disable 8 to Transmit disable 0" in Table 86-3? Similar question about PMD signal detect in Table 86-4. If there is a good reason, please state it in the form of a Note under the tables.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT. [Editor's note: Page and line numbers reversed]
"Transmit disable 9" is separated from "Transmit disable 8 to Transmit disable 0" to show that it is mapped to bit 1.9.10 not 1.9.1 (bit ordering).

Cl **86** *SC* **86.4** *P* **282** *L* **35** # 559

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

In Tables 86-3 and 86-4 the MDIO variable names do not all match the names used in Clause 45. Likewise, not all of the register names match with the names in Clause 45. Also applies to Tables 87-2, 87-3, 88-2 and 88-3.

SuggestedRemedy

In the MDIO variable columns, change "Global transmit disable" to "Global PMD transmit disable", change "Transmit disable x" to "PMD transmit disable x", change "Local fault" to "Fault", change "PMD signal detect x" to "PMD receive signal detect x"
In the PMA/PMD register name columns, change "Control 1 register" to PMA/PMD control 1 register", change "Transmit disable register" to "PMD transmit disable register", change "Status x register" to "PMA/PMD status x register", change "Receive signal detect register" to "PMD receive signal detect register". Make equivalent changes to Tables 87-2, 87-3, 88-2 and 88-3.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. See also comment 501.

Cl **86** *SC* **86.4** *P* **282** *L* **44** # 134

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

For 40GBASE-SR4, the highest-numbered six of the ten lane-by-lane transmit disables do not apply.change to read "For 40GBASE-SR4, the highest six lane-by-lane transmit disable signals from the pool of ten lane-by-lane transmit disable signals are not used."

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT. [Editor's note: Page and line numbers reversed]
Bits are not signals. Not sure if control variables are or not. It's more than "don't apply"; the control variables need not even exist. No need to introduce "pool".

Cl **86** *SC* **86.5** *P* **283** *L* **18** # 135

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

For 40GBASE-SR4, the highest-numbered six of the ten lane-by-lane signal detects do not apply.change to read "For 40GBASE-SR4, the highest six lane-by-lane signal detect signals from the pool of ten lane-by-lane signal detect signals are not used."

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT. [Editor's note: Page and line numbers reversed]
See response to comment 134.

Cl **86** *SC* **86.5.1** *P* **283** *L* **4** # 360

Frazier, Howard M Broadcom

Comment Type **TR** *Comment Status* **D**

The diagram appears to include a 4 input AND gate producing SIGNAL_DETECT, and could be interpretted to mean that Ln-1 is not included in the SIGNAL_DETECT function.

SuggestedRemedy

Show a 4 input AND gate, or place an ellipsis between the 2nd and last inputs.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Use ellipsis or three full stops.

Cl **86** *SC* **86.5.7** *P* **285** *L* **26** # 137

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

The draft says "variable is set to one" or "variable is set to zero". It is more common to use the terms the "variable is set" and "vartiable is reset", which means that it is set to one or zero, respectively. Use consistently in the draft. There are multiple locations where there is inconsient use of these terms

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. [Editor's note: Page and line numbers reversed]
Including "to zero" is explicit. Draft has "set to zero" 12 times, "reset to zero" once, "reset to all zeros" 10 times. 45.5.3.7 has "clears to zero" twice. "reset" is used as an operation ("PHY reset") or even a Boolean variable. Base standard doesn't seem consistent.
For a counter, use "reset to all zeros" and for a single bit, use "set to zero", throughout 802.3ba.

Cl **86** *SC* **86.7.1** *P* **287** *L* **34** # 840

Dudek, Michael QLogic Corporation

Comment Type **T** *Comment Status* **D**

The footnote appears to be left from an earlier time when the numbers were different. The difference between Min OMA and OMA - TDP min is now only 0.7dB

SuggestedRemedy

Change the footnote to say "TDP<0.7dB

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change the footnote to use (OMA)min-(OMA-TDP)min, which is 0.7 dB in D3.0 but may be changed by other comments.
[Editor's note: This comment is against 86.7.1, hence updated the subclause number field accordingly]

Cl **86** *SC* **86.7.2** *P* **287** *L* **20** # 871

Petrilla, John Avago Technologies

Comment Type **T** *Comment Status* **D**

In table 86-6, the existing TDP value was based on different TP4 output criteria (J2 & J9), than the currently proposed TJ(BER=1E-12) = 0.70 UI. To reduce inconsistencies among the requirements, the ref receiver in the TDP test should have the same output criteria as that intended at TP4 for an operating link.

SuggestedRemedy

In table 86-8 change the value for TDP from 3.7 to 3.6.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **86** *SC* **86.7.2** *P* **287** *L* **28** # 872

Petrilla, John Avago Technologies

Comment Type **T** *Comment Status* **D**

In Table 86-6, the existing Y2 coordinate yields a mask that is not well matched with currently expected worst case Tx output contours.

SuggestedRemedy

In Table 86-6 change the Y2 coordinate from 0.33 to 0.35

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **86** *SC* **86.7.2** *P* **287** *L* **7** # 355

Abbott, John Corning Inc.

Comment Type **TR** *Comment Status* **D**

also line 33(footnote) Clause 86 Table 86-6 p.287 (transmit characteristics) RMS spectral width. Footnote a. "RMS spectral width is the standard deviation of the spectrum". 850nm VCSELs have a line spectrum which is not well described by an RMS value; the use of an RMS value in link calculations gives a different estimate of pulse spreading. See for example
www.finisar.com/download_nC3xpBOptical%20Modes%20In%20VCSELs.pdf
If the RMS value is sufficiently pessimistic the target length should be increased or the extra margin somehow noted. If the RMS value is too optimistic other changes need to be made.

SuggestedRemedy

augment historical link model calculations to account for individual lines in VCSEL spectrum.

Proposed Response *Response Status* **W**

PROPOSED REJECT. As the reference says, MTM spectral "width" is measured per FOTP-127. The model is not invalidated by discrete lines, and pessimism is adjusted for by using a k factor much less than 1.

Cl **86** *SC* **86.7.3** *P* **288** *L* **1** # 136

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

Some of the references to 40GBASE-SR4 / 100GBASE-SR4 contain 'and' between types and some 'or'. Why is 'or' used in case of definition of parameters which are common for both types? Even title in Table 86-8 suggests the use of 'and'.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. [Editor's note: Page and line numbers reversed] Clause contains two specifications, hence "and", but unlike e.g. Clause 88, the specs for each PMD in several tables is the same, hence "or". A PMD is expected to be one type or the other, hence "or".
Unless SR4 and SR10 specifications differ, change "86.7 PMD to MDI specifications for 40GBASE-SR4 and 100GBASE-SR10", "Table 86-6-40GBASE-SR4 and 100GBASE-SR10 optical transmit characteristics", "Table 86-8-40GBASE-SR4 and 100GBASE-SR10 optical receiver characteristics", "86.7.4 40GBASE-SR4 and 100GBASE-SR10 illustrative link power budget", "Table 86-9-40GBASE-SR4 and 40GBASE-SR10 illustrative link power budget" and first sentences of 86.6 Lane assignments and 86.10.3 Medium Dependent Interface (MDI), to "or".

Cl **86** *SC* **86.7.3** *P* **288** *L* **29** # 873

Petrilla, John Avago Technologies

Comment Type **TR** *Comment Status* **D**

In Table 86-8 the values of J2 and J9 have been found difficult to simultaneously meet as called for in 86.8.4.7. This appears due to the lengthly DDJ distribution tails that occurs with a PRBS31 or similarly long-run-lenght, richly-structured test patterns after passing through a VCSEL and inducing VECP. In these cases a significant portion of the peak-to-peak DDJ in the signal is not included in J2 but is included in J9. This was not fully appreciated when the existing J2 and J9 values were proposed for the SRS condition. The J2 and J9 values for the SRS test should be changed to reflect actual operating conditions as well as being more readily implemented. The existing J2 and J9 values are based on a dual-Dirac - Gaussian combination where peak-to-peak DJ equals dual-Dirac DJ of 0.274 UI, RJ(@1E-12) = 0.229 UI and TJ(@1E-12) = 0.498 UI. The proposed new values are based on an approximate binominal - Gaussion combination where peak-to-peak DJ ~ 0.330 UI, RJ(@1E-12) ~ 0.225 UI and TJ(@1E-12) ~ 0.502 UI.

SuggestedRemedy

In Table 86-8, change the value of J2 from 0.35 to 0.3.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Tweak J2, new value TBD. Is "peak-to-peak DJ" the DJ to all but 10^-12?

Cl **86** *SC* **86.7.3** *P* **288** *L* **33** # 381

Ganga, Ilango Intel Corporation

Comment Type **T** *Comment Status* **D**

[Editor's note: Comment 71 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
"Receiver jitter tolerance signal level in OMA, each lane" (shown as "Max" in D2.3) is used in 86.8.4.8 "as in 68.6.11, with the following differences:
à
b) The parameters of the signal are specified in Table 86-8..."
68.6.11 says "... the power in OMA at the receiver is adjusted, using the optical attenuator, to be equal to the stressed sensitivity in OMA, also given in Table 68-5, and a BER of better than 10-12 shall be achieved."
So, we are to adjust the power in OMA to any value we like as long as it doesn't exceed the -5.4 limit in Table 86-8. So the spec is arbitrary and uncertain: a tester can make anything fail by setting the OMA low enough.
Note this is unlike stressed sensitivity which is a property of the receiver under test not of the test rig. It's more like an eye mask, which is also fixed.
If we were not trying to move to Sponsor ballot this would be a TR.

SuggestedRemedy

Change the row
"Receiver jitter tolerance signal level in OMA, each lane Max -5.4 dBm"
to
"Receiver jitter tolerance, each lane, per conditions below" (deleting "Max -5.4 dBm" and below "Conditions of receiver jitter tolerance test:", insert a new row
Signal level in OMA - -5.4 dBm"
Keep the footnote, but change "This is a test of the optical receiver's ability" to "Jitter tolerance defines the optical receiver's ability"
Another remedy would be to change "Receiver jitter tolerance signal level in OMA" to "Receiver jitter tolerance in OMA" and modify 86.8.4.8 b to say that the test signal's OMA is set at the maximum for receiver jitter tolerance signal level in OMA given in Table 86-8.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change "Receiver jitter tolerance signal level in OMA" to "Receiver jitter tolerance in OMA" and change item b in 86.8.4.8 to be "The parameters of the signal are specified in Table 86-8 and the power in OMA at the receiver is set to the maximum for receiver jitter tolerance in OMA given in Table 86-8;"

Cl **86** *SC* **86.7.4** *P* **289** *L* **3** # 354

Abbott, John Corning Inc.

Comment Type **TR** *Comment Status* **D**

1.Table 86-9 p. 289 (see also Tables 86-6, 86-7, 86-8). The 802.3ba standard needs not only an illustrative power budget but an illustrative link model similar to 802.3ae models on http://ieee802.org/3/ae/public/index.html. The link needs to satisfy both power penalty and ISI requirements and these depend on more parameters than what is explicitly mentioned in Table 86-9. The illustrative link model gives a set of common baseline assumptions and ensures all link calculations have a common consensus root. The reference to the illustrative link model can be in an annex to clause 86 or in the same section at Table 86-9.

SuggestedRemedy

add an illustrative consensus link model which meets both power and ISI-BER requirements.

Proposed Response *Response Status* **W**

PROPOSED REJECT. This is a standard, not a textbook. 10GE did not put its model in the standard. With the introduction of newer specification methodologies essential for low cost implementation at 10G/lane, the Ethernet link model becomes only one input to a specification developed with engineering judgement and, one hopes, measurement as other inputs. SRn links are less power-limited and more jitter-limited than 802.3ae optical links. Note that the electrical PMDs don't have an accessible link model at all.

Cl **86** *SC* **86.7.4** *P* **289** *L* **7** # 350

Kolesar, Paul CommScope Solutions

Comment Type **T** *Comment Status* **D** *SRreach*

*** Comment submitted with the file 41772900024-d3_0_comment_Table86-9.xls attached ***

Table 86-9 can be modified to illustrate the power budget for the proposed longer operating distances of 120 m on OM3 and 150 m on OM4.

SuggestedRemedy

See attached replacement table.

Proposed Response *Response Status* **W**

PROPOSED REJECT. The objective is 100 m. The proposed table is for 120 m.
See response to comment 349.

Cl **86** *SC* **86.7.4** *P* **289** *L* **7** # 351

Kolesar, Paul CommScope Solutions

Comment Type **E** *Comment Status* **D**

Table title contains error for 100G.

SuggestedRemedy

Change "40GBASE-SR10" to "100GBASE-SR10".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **86** *SC* **86.8.1** *P* **290** *L* **1** # 361

Frazier, Howard M Broadcom

Comment Type **ER** *Comment Status* **D**

In Figure 86-3, there are numerous right angled arrows that clutter the diagram, are difficult to interpret, and seem to add little value.

SuggestedRemedy

Delete the right angled arrows.

Proposed Response *Response Status* **W**

PROPOSED REJECT. Unlike previous specs, we are now careful to define which direction the test equipment looks when measuring at each test points, and the right angled arrows show that, microwave style. We have to be more pedantic with each generation as we squeeze more performance/cost out of the same materials.

Cl **86** *SC* **86.8.2** *P* **290** *L* **33** # 131

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D** *Cl85 Cl84*

Such a table (as 86-10) should be also included in the copper PHY clauses, which for now contain only textual description of what the test points are and where they are located.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. [Editor's note: Page and line numbers reversed]
Test points for back-plane are adequately defined in 84.7.1 which references the base text in 71.6.1.
Under 85.7.1 Link block diagram create table of entries summarizing textual description of test points.

Cl **86** *SC* **86.8.3.2** *P* **292** *L* **16** # 301

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

Eye diagrams, J9, and if it matters, J2 and AC common-mode voltage, are measured with all lanes running so any crosstalk is included. We forgot to mention this.

SuggestedRemedy

Add text here, at 86.8.3.3, 86A.5.3.1 to make this clear. Note that 87 and 88 reference 86.8.3.2.
Proposed text here: "Whether optical or electrical, all co-propagating and counter-propagating lanes are active, using one of patterns 3, 5, or a valid 40GBASE-R or 100GBASE-R signal. The input lanes of the item under test are receiving signals that are asynchronous to those being output."
At 86.8.3.3, "J2 Jitter and J9 jitter are specified with all co-propagating and counter-propagating lanes active, using one of patterns 3, 5, or a valid 40GBASE-R or 100GBASE-R signal. The input lanes of the item under test are receiving signals that are asynchronous to those being output."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Believe the crosstalk does not affect AC common-mode voltage significantly.

Cl **86** *SC* **86.8.3.3** *P* **292** *L* **16** # 874

Petrilla, John Avago Technologies

Comment Type **TR** *Comment Status* **D**

The existing eye diagram definition does not mention the other signal lanes and measurements may be made neglecting these sources of potential crosstalk. There's a similar lack of mention of activating potential crosstalk sources in 86A.5.3.6. Fortunately 86A.5.3.6 refers to 86.8.3.2 and an appropriate remedy for 86.8.3.2 will carry over to 86A.5.3.

SuggestedRemedy

Insert at the end of the first paragraph in 86.8.3.2, "Whether electrical or optical eye diagrams, all co-propagating and counter-propagating signal lanes in the channel are active as crosstalk sources, using one of patterns 3, 5, or valid 40GBASE-R or 100GBASE-R signals. The input lanes of the item under test are receiving signals that are asynchronous to those being output."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. See response to comment 301.

Cl **86** *SC* **86.8.3.3** *P* **292** *L* **44** # 875

Petrilla, John Avago Technologies

Comment Type **TR** *Comment Status* **D**

The existing jitter definitions for J2 and J9 do not mention the other signal lanes and measurements may be made neglecting these sources of potential crosstalk.

SuggestedRemedy

For J2 and J9, insert into 86.8.3.3, "All co-propagating and counter-propagating signal lanes in the channel are active as crosstalk sources, using one of patterns 3, 5, or valid 40GBASE-R4or 100GBASE-R signals. The input lanes of the item under test are receiving signals that are asynchronous to those being output."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. See response to comment 301.

Cl **86** *SC* **86.8.3.3.2** *P* **293** *L* **4** # 362

Frazier, Howard M Broadcom

Comment Type **TR** *Comment Status* **D**

Why does the word "normative" appear in the last sentence of this subclause, but not in the parallel sentence of 86.8.3.3.1

SuggestedRemedy

Delete "normative".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Delete "The normative".

Cl **86** *SC* **86.8.4.3** *P* **293** *L* **22** # 130

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

OMA is as defined in 52.9.5 for measurement with a square wave (8 ones, 8 zeros) test patternchange to read "OMA is as defined in 52.9.5 for measurement with a square wave (see Table 86-12) test pattern"

SuggestedRemedy

no need to repeat informatuion included already in Table 86-12

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. [Editor's note: Page and line numbers reversed]
Want to be sure the reader realises that 8+8 is meant, rather than any other square wave.
Add to the end of the paragraph "See 86.8.2 for test pattern information.".

Cl **86** *SC* **86.8.4.4** *P* **293** *L* **28** # 876

Petrilla, John Avago Technologies

Comment Type **TR** *Comment Status* **D**

The existing TDP definition refers to 52.9.10 with a list of exceptions. Unfortunately, 52.9.10 can be readily interpreted to yield an understanding that the illustrated test setup in Figure 52-12 is compulsory. For example, the Test Procedure (52.9.10.4) starts with the sentence, "To measure the transmitter and dispersion penalty (TDP) the following procedure shall be used." Then item a) of the procedure declares, "Configure the test equipment as described above and illustrated in Figure 52-12." Since test setups or block diagrams are examples or references but not compulsory, another exception should be added to the list to clarify this issue.

SuggestedRemedy

Add to the list of exceptions, "f) The test setup illustrated in Figure 52-12 is for example and not compulsory.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Add to the list of exceptions,
f) The test setup illustrated in Figure 52-12 shows the reference method. Other measurement implementations may be used with suitable calibration.

Cl **86** *SC* **86.8.4.4** *P* **293** *L* **34** # 877

Petrilla, John Avago Technologies

Comment Type **T** *Comment Status* **D**

In item d), a reference receiver bandwidth of 6.1 GHz provides a better match (than 6.2 GHz) of the total link penalties between the test case and the worst case link at max reach.

SuggestedRemedy

In item d), change the reference receiver bandwidth from 6.2 GHz to 6.1 GHz.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **86** *SC* **86.8.4.4** *P* **293** *L* **39** # 363

Frazier, Howard M Broadcom

Comment Type **TR** *Comment Status* **D**

"Otherwise TDP(i) is zero, TDP(i) = 0." is redundant.

SuggestedRemedy

Replace with "Otherwise TDP(i) = 0."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **86** *SC* **86.8.4.7** *P* **295** *L* **23** # 300

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D** *BER*

Any PMD should provide the same BER performance at the MAC-PLS service interface irrespective of the number of lanes. It doesn't matter how the errors are divided among the lanes. See other comments for 87 and 88, and for 86A.

SuggestedRemedy

Between d and e, insert new bullet "The aggregate BER of the PMD receiver is the average of the BER of all receive lanes at the same receive OMA."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Comments 300, 342, 305, 568 address related issues and must be resolved together. See dawe_01_0110 which presents the following except the last item:
Insert new bullet a "52.9.9 defines the reference test procedure for a single lane. See 86.8.2.1 and below for multi-lane considerations."
Insert new bullet e "The interface BER of the PMD receiver is the average of the BER of all receive lanes while stressed at the same receive OMA."
Change
"For each lane, the stressed receiver sensitivity is defined with the transmit section in operation on all lanes and with the receive lanes not under test in operation."
to
"Stressed receiver sensitivity is defined with all transmit and receive lanes in operation. All receive lanes may be stressed at the same time, or each receive lane may be stressed in turn."
At the end of the subclause, add "For 40GBASE-SR4 and 100GBASE-SR10, the relevant BER is the interface BER. The interface BER is the average of the four or ten BERs of the receive lanes when stressed: see 86.8.2.1."
Insert new "86.8.2.1 Multi-lane testing considerations
TDP is defined for each lane, at a BER of 10-12 on that lane. Stressed receiver sensitivity, receiver jitter tolerance and host input signal tolerance (in Annex 86A) are defined for an interface BER of 10-12. The interface BER is the average of the four or ten BERs of the receive lanes when they are stressed.
Measurements with Pattern 3 (PRBS31) allow lane-by-lane BER measurements.
Measurements with Pattern 5 (scrambled idle) give the interface BER if all lanes are stressed at the same time. If each lane is stressed in turn, the BER is diluted by the three or nine unstressed lanes, and the BER for that stressed lane must be corrected, e.g. by multiplying by 4 or 10 if the unstressed lanes have low BER. To allow TDP measurement with Pattern 5, unstressed lanes for the error detector may be created by setting the power at the reference receivers well above their sensitivities, or by copying the contents of the transmit lanes not under BER test to the error detector by other means. In stressed receiver sensitivity and receiver jitter tolerance measurements, unstressed lanes may be created by setting the power at the receiver under test well above its sensitivity and/or not stressing those lanes with ISI and jitter, or by other means. Either each receive lane is stressed in turn while all are operated, or all can be stressed together. To find the interface BER, the BERs of all the lanes when stressed are averaged.
Where relevant, parameters are defined with all co-propagating and counter-propagating

lanes operational so that crosstalk effects are included. While the lanes in a particular direction share a common clock, the Tx and Rx directions are not synchronous to each other."
In 86.8.4.8, delete "for each lane", insert new bullet a "68.6.11 defines the reference test procedure for a single lane: see 86.8.2.1 for multi-lane considerations;" then new c "All receive lanes may be stressed at the same time, or each receive lane may be stressed in turn;" and g "The interface BER of the PMD receiver is the average of the BER of all receive lanes when stressed."
In Table 86-8, delete "each lane" twice.
In addition, so that the SRS implementer uses this clause's OMA (not Clause 52's), add another bullet to 86.8.4.7 "Extinction ratio is defined by 86.8.4.5".

Cl **86** *SC* **86.8.4.7** *P* **295** *L* **27** # 878

Petrilla, John Avago Technologies

Comment Type **TR** *Comment Status* **D**

Item f) belongs in 86.8.4.8

SuggestedRemedy

Move item f) from 86.8.4.7 to 86.8.4.8.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Same as comment 560.

Cl **86** *SC* **86.8.4.7** *P* **295** *L* **27** # 560

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

The response to comment 190 against Draft 2.2 to insert exception f in subclause 86.8.4.8 has incorrectly been applied to subclause 86.8.4.7 instead

SuggestedRemedy

Move exception f) "The mode-conditioning patch cord suitable for 62.5/125 um fiber is not used." from subclause 86.8.4.7 to subclause 86.8.4.8

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **86A** *SC* **86A** *P* **421** *L* **6** # 338

Dawe, Piers J G Independant

Comment Type **ER** *Comment Status* **D** *Cl1*

We call the MDI, MDI, whatever data rate it supports and however many lanes it has. We don't call it nMDI.

SuggestedRemedy

Change "nPPI" to "PPI" throughout.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. For discussion.
Originally the same name, PPI, was used for both 40G (4-lane) and 100G (10-lane). In response to comment 537 against draft 2.0, XLPPI and CPPI were introduced, and in addition, PPI when referring to either or both was renamed to nPPI. But no reason for this last change is recorded in the database.
Comment 63 against proposed to D2.2 change nPPI back to PPI throughout but this was not agreed. Response said "This term was inserted in response to comment 537 against draft 2.0. The n represents "C" or "XL" which describes the rate of operation supported by the interface and not the number of lanes." So n is a placeholder for XL or C, but it is not apparent that a placeholder is needed.
As well as the MDI, which does not change its name with either MAC rate or lane count, the RS keeps the same name for all MAC rates. Neither has a leading "n".
In 1.5 Abbreviations, there are no mixed-case abbreviations (nPPI is not on the list).

Cl **86A** *SC* **86A.1** *P* **421** *L* **23** # 604

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

This says "86A.4 contains the electrical specifications for nPPI on transmit side then receive side". But the text of 86A.4 has changed to use the terms "host to module" and "module to host"

SuggestedRemedy

Change to "86A.4 contains the electrical specifications for nPPI from host to module (Tx side) and then module to host (Rx side)". Also on line 51 change "86A.4.1 and 86A.4.2 specify the transmit side and receive side respectively of the nPPI" to "86A.4.1 and 86A.4.2 specify the host to module (Tx side) and module to host (Rx side) respectively of the nPPI"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **86A** *SC* **86A.4.1** *P* **442** *L* **28** # 793

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D** *LR4*

To make a future 40GBASE-LR4 module with an unretimed interface feasible, the J2 and J9 limits of the XLPPI interface are proposed to be slightly changed.
A related comment proposes to modify the optical power levels of 40GBASE-LR4.
See king_01_0110.pdf

SuggestedRemedy

In Table 86A-1 change "J2 Jitter output" to "J2 Jitter output for 100GBASE-R" and add a new row above for "J2 Jitter output for 40GBASE-R" with a value of 0.17 UI Max.
In Table 86A-2 change "J2 Jitter tolerance" to "J2 Jitter tolerance for 100GBASE-R" and add a new row for "J2 Jitter tolerance for 40GBASE-R" at "TP1a" with a value of 0.17 UI Max.
In Table 86A-3 change "J9 Jitter output" to "J9 Jitter output for 100GBASE-R" and add a new row above for "J9 Jitter output for 40GBASE-R" with a value of 0.64 UI Max.
In Table 86A-4 change "J9 Jitter tolerance" to "J9 Jitter tolerance for 100GBASE-R" and add a new row above for "J9 Jitter tolerance for 40GBASE-R" at "TP4" with a value of 0.64 UI Max.
See king_01_0110 for further details.
Note, there is a related comment to increase the optical power levels of 40GBASE-LR4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Hear presentation of king_01_0110.
At TP1a (tables 86A-1 and 2), change J2 limit from 0.18 to 0.17 UI and J9 from 0.26 to 0.28 or 0.29 UI TBD, both for XLPPI and CPPI. In 86A.1, change "40GBASE-SR4 or 100GBASE-SR10" to "40GBASE-SR4, 40GBASE-LR4 or 100GBASE-SR10".
For changes to tables 86A-3 and 86A-4 see response to comment 886.
These comments are on the same topic: 792 793 814 816 886 889.
[Editor's note: Page number changed from 442]

Cl **86A** *SC* **86A.4.1.1** *P* **423** *L* **15** # 365

Frazier, Howard M Broadcom

Comment Type **TR** *Comment Status* **D**

Why is it necessary to plot a constant in Figure 86A-1? Differential to common-mode input return loss does not vary with frequency, and thus does not need to be plotted.

SuggestedRemedy

Delete the plot of Differential to common-mode input return loss.

Proposed Response *Response Status* **W**

PROPOSED REJECT. It helps the reader to compare the various return losses, so he can assess the spec and progress his design. The line costs nothing and takes no space (as long as it is not put on its own chart).

Cl **86A** *SC* **86A.4.1.1** *P* **423** *L* **17** # 366

Frazier, Howard M Broadcom

Comment Type **TR** *Comment Status* **D**

The indication of the "compliant region" in Figure 86A-1 is ambiguous.

SuggestedRemedy

Use shading to indicate the compliant region.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. This indicates that for each line, the compliant region is beneath it. Three kinds of shading, overlapping, would be very hard to decipher. Change "Compliant region" to "Compliant regions". See also comment 611.

Cl **86A** *SC* **86A.4.2** *P* **424** *L* **45** # 886

Petrilla, John Avago Technologies

Comment Type **TR** *Comment Status* **D** *LR4*

The values of J2 and J9 are not well-aligned with the currently proposed TP4 output TJ(BER=1E-12) = 0.70 UI target. It also appears that lengthly DDJ distribution tails occur with a PRBS31 or similarly long-run-lenght, richly-structured test patterns after passing through a VCSEL and inducing VECP. In these cases a significant portion of the peak-to-peak DDJ in the signal is not included in J2 but is included in J9. This was not fully appreciated when the existing J2 and J9 values were proposed for TP4. Further, there's interest in adjusting nPPI requirements to accommodate 40GBASE-LR4 in small footprint form factors. The J2 and J9 values for TP4 should be changed to reflect expected jitter distributions and reasonably accommodate LR4. The existing J2 and J9 values are based on a dual-Dirac - Gaussian combination where peak-to-peak DJ equals dual-Dirac DJ of 0.328 UI, RJ(@1E-12) = 0.332 UI and TJ(@1E-12) = 0.661 UI. The proposed new values are based on an approximate binominal - Gaussion combination where peak-to-peak DJ ~ 0.362 UI, RJ(@1E-12) ~ 0.332 UI and TJ(@1E-12) ~ 0.694 UI. This also applies to J2 and J9 jitter tolerance requirements in Table 86A-4.

SuggestedRemedy

In Tables 86A-3 and 86A-4 change J2 from 0.46 to 0.42 and J9 from 0.62 to 0.65.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. See also response to comments 792 793 814 816 889.

Cl **86A** *SC* **86A.4.2** *P* **424** *L* **47** # 814

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D** *LR4*

"During July 2009 plenary petrilla_01_0709 stated "
At TP4, for the combination of J2 (max = 0.46 UI) X1 = 0.11 UI and J9 (max = 0.63 UI), max TJ is estimated at 0.716 UI. This is higher than the expected 0.68 UI and may place too heavy a burden on the downstream receiver. Relief is proposed by reducing max J9 from 0.63 UI to 0.62 UI to yield a max TJ estimate of 0.704 UI."
The premise for the change was not to exceed TJ of 0.7 UI but the current J2=0.46 and J9=0.62 results in TJ of 0.66 UI, this will increase cost of the optics and will make 100Gbase-SR10 implementation more difficult due to the X10 connector. Please set the specification to what was intended.
"

SuggestedRemedy

Keep J2 but increase J9 to 0.4. TJ 1E-12 depends on the jitter distribution but for the case of max DJ (32 ps) to hit J2 then TJ=0.7 UI.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. See response to comment 886.
Typo in suggested remedy: J9 max 0.64 was intended.
These comments are on the same topic: 792 793 814 816 886 889.

Cl **86A** *SC* **86A.4.2** *P* **425** *L* **11** # 605

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

86A-4 has parameter "Single ended input voltage" but note a says "The single ended input voltage tolerance is ..."

SuggestedRemedy

make the note consistent with the parameter.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change "The single ended input voltage tolerance is the allowable range of the instantaneous input signals" to "The host is required to tolerate (work correctly with) input signals with instantaneous voltages anywhere in the specified range.".

Cl **86A** *SC* **86A.4.2** *P* **425** *L* **19** # 382

Ganga, Ilango Intel Corporation

Comment Type **T** *Comment Status* **D** *HIST*

[Editor's note: Comment 75 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
BER is a criterion of tolerance, not a metric of it. It's already stated in 86A.5.3.8.6 and is the same for the whole project so should not be repeated here.
Note comment on related issue against 86.7.3 Table 86-8.
Also, per D2.0 comment 470:
'ACCEPT IN PRINCIPLE. Need to avoid using "receive" or "receiver" on the transmit path (down the stack, PMA to MDI) or "transmit" or "transmitter" on the receive path (up the stack, MDI to PMA).
Change names using the terms host, module, input and output.'

SuggestedRemedy

In Table 86A-4, change
"Receiver signal tolerance, each lane (BER) - 10-12"
to
"Host input signal tolerance, each lane, per conditions below"
In footnote b, change "host receiver (see 86A.5.3.8)." to "host input (see 86A.5.3.8)." (it happens that the host input is a receiver input but we resolved to use "input" and "output" in D2.0 comment 470).
Make the cross-reference into a proper link.
In Table 86A-6 and 86A.5.3.8 consider changing "receiver tolerance" to input tolerance" as appropriate.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change "Receiver signal tolerance, each lane (BER)" to "Host input signal tolerance, each lane (BER)"
In Note b change "host receiver" to "host electrical receiver" and make the reference a link.
This change in terminology is in accordance with the response to comment 470 against D 2.0

Cl **86A** *SC* **86A.4.2** *P* **425** *L* **19** # 865

Dudek, Michael QLogic Corporation

Comment Type **T** *Comment Status* **D** *HIST*

This is actually 86A. The parameter name doesn't match the spec. The receiver does not have to tolerate an incoming signal BER of 1e-12.

SuggestedRemedy

Change the parameter name to Bit Error Rate each lane.

Proposed Response *Response Status* **W**

PROPOSED REJECT. The suggested resolution and the proposal below are in conflict with the task force directed proposed response to comment 382, which includes 'Change "Receiver signal tolerance, each lane (BER)" to "Host input signal tolerance, each lane (BER)" '
Consider changing "Receiver signal tolerance, each lane (BER)" to "Host input signal tolerance BER criterion".
[Editor's note: This comment is against 86A.4.2, hence corrected clause/subclause number fields to 86A]
See also comment 341.

Cl **86A** *SC* **86A.4.2** *P* **425** *L* **25** # 866

Dudek, Michael QLogic Corporation

Comment Type **T** *Comment Status* **D**

This is actually 86A. The jitter values are now in a signal description section. They are no longer "tolerance"

SuggestedRemedy

Delete "tolerance" 3 places.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. [Editor's note: This comment is against 86A.4.2, hence corrected clause/subclause number fields to 86A] As suggested. Also, at line 37 make "86A.5.3.8" a link.

Cl **86A** *SC* **86A.4.2** *P* **425** *L* **31** # 816

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D** *LR4*

"During July 2009 plenary petrilla_01_0709 stated "
At TP4, for the combination of J2 (max = 0.46 UI) X1 = 0.11 UI and J9 (max = 0.63 UI), max TJ is estimated at 0.716 UI. This is higher than the expected 0.68 UI and may place too heavy a burden on the downstream receiver. Relief is proposed by reducing max J9 from 0.63 UI to 0.62 UI to yield a max TJ estimate of 0.704 UI."
The premise for the change was not to exceed TJ of 0.7 UI but the current J2=0.46 and J9=0.62 results in TJ of 0.66 UI, this will increase cost of the optics and will make 100Gbase-SR10 implementation more difficult due to the X10 connector. Please set the specification to what was intended.

SuggestedRemedy

Keep J2 but increase J9 to 0.4. TJ 1E-12 depends on the jitter distribution but for the case of max DJ (32 ps) to hit J2 then TJ=0.7 UI.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. See response to comment 886.
Typo in suggested remedy: J9 max 0.64 was intended. These comments are on the same topic: 792 793 814 816 886 889.

Cl **86A** *SC* **86A.4.2** *P* **425** *L* **33** # 887

Petrilla, John Avago Technologies

Comment Type **TR** *Comment Status* **D**

Table 86A-4 declares a DDPWS tolerance for the host input. Unfortunately, DDPWS is only defined for PRBS9 which appears to have little relevance to the actual signal seen at this interface. Since this requirement appears to provide little utility and will likely add burden to the implementer, it should be dropped.

SuggestedRemedy

In Table 86A-4, delete the DDPWS row.

Proposed Response *Response Status* **W**

PROPOSED REJECT. DDPWS is one of the most important specs in the table. It is a key indicator of a receivable signal, and a set DDPWS enforces consistency among signal tolerance testers. The use of PRBS9 puts the measurement at a near optimum statistical significance. The burden is felt only once, when setting up the host electrical receiver signal tolerance test.

Cl **86A** *SC* **86A.4.2** *P* **425** *L* **35** # 867

Dudek, Michael QLogic Corporation

Comment Type **T** *Comment Status* **D**

This is actually 86A. The section on the set-up of the test (86A.5.3.8.5) refers to this table for the rise/fall times and amplitudes of the calibration crosstalk signal.

SuggestedRemedy

Add rows to the end of this table. Crosstalk calibration signal amplitude TP1 700mV.
Crosstalk calibration signal transition times(20-80) TP1 34ps.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. [Editor's note: This comment is against 86A.4.2, hence corrected clause/subclause number fields to 86A] Add rows to the end of this table (numbers come from Y2 and transition time in Table 86A-1):
Crosstalk calibration signal VMA TP1a 700 mV
Crosstalk calibration signal transition times, 20 to 80% TP1a 28 ps.
Add to TP1a Parameter in Table 86A-5 "module receiver compliance crosstalk signal calibration"

Cl **86A** *SC* **86A.5.1.1.2** *P* **428** *L* **25** # 339

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

The minimum loss limit for mated HCB and MCB is generally more than the reference HCB and MCB losses, excluding the connector. If a connector has very little loss at some frequency, this is an unwanted constraint that would force the compliance board maker to aim for more than the reference loss.

SuggestedRemedy

In Equation 86A-6, change - 0.109 + 0.654 f + 0.12f dB to -0.11 + 0.46 f + 0.16f dB

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. To be discussed.
In Equation 86A-6, change - 0.109 + 0.654sqrt(f) + 0.12f dB to -0.11 + 0.46sqrt(f) + 0.16f dB
Make the equivalent change to equation 85-35.

Cl **86A** *SC* **86A.5.1.1.2** *P* **429** *L* **44** # 383

Ganga, Ilango Intel Corporation

Comment Type **T** *Comment Status* **D**

[Editor's note: Comment 74 against D 2.3 was agreed to be resubmitted by the Editor against D 3.0]
In SFP+ and previously in 86A, HCB-MCB crosstalk was controlled up to 15 GHz. Now 86A refers to 85.10.9.3 which does not control above 10 GHz. HCB-MCB crosstalk needs to be controlled to a frequency higher than product crosstalk (affects J9, eye, Qsq) according to the roll-off of the aggressor signal. Qsq is observed in a 12 GHz bandwidth.
Also, every other spec in 86A starts at 10 MHz not 50 MHz.

SuggestedRemedy

Define an appropriate upper end of the frequency range for HCB-MCB crosstalk (for Annex 86A purposes). Define the lower end at 10 MHz (for Annex 86A purposes).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change "The limits on integrated crosstalk noise of the mated HCB and MCB are specified in 85.10.9.3." to "The limits on integrated crosstalk noise of the mated HCB and MCB are specified in 85.10.9.3 with the exception that the frequency range is 0.01 GHz to 15 GHz."

Cl **86A** *SC* **86A.5.1.1.2** *P* **429** *L* **44** # 340

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

In SFP+ and previously in 86A, HCB-MCB crosstalk was controlled up to 15 GHz. Now 86A refers to 85.10.9.3 with a different methodology and new numbers. In D2.3 we agreed to adjust the frequency limits to suit 86A's purposes. But we still need to see how the new limits compare with the old, and if they are tight enough for 86A compliance boards.

SuggestedRemedy

Compare the ICN specs in Table 85-11 in 0.01 to 15 GHz with the crosstalk spectral limits in D2.2 Figure 86A-6. If appropriate, provide ICN specs specifically for 86A with suitable limits.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **86A** *SC* **86A.5.1.1.2** *P* **430** *L* **7** # 606

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

In Figure 86A-5 the label "Differential to common-mode mode conversion loss looking in to HCB or MCB" has "mode" twice which does not match the parameter name

SuggestedRemedy

change to "Differential to common-mode conversion loss looking in to HCB or MCB"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change to "Differential to common-mode conversion loss looking into HCB or MCB"

Cl **86A** *SC* **86A.5.3.3** *P* **432** *L* **1** # 888

Petrilla, John Avago Technologies

Comment Type **T** *Comment Status* **D**

The definition for transition time measurements calls for observation through a 12 GHz low pass filter. To ease the burden on implementers, this requirement should be harmonized with that in 83A.5, "The signal waveform, eye, and jitter may be measured using a receiver with an equivalent minimum -3dB bandwidth of at least 18 GHz." This also applies to 86A.5.3.4, 86A.5.3.5 and 86A.5.3.6.

SuggestedRemedy

Change from, "the waveform is observed through a 12 GHz low pass filter response." to "the waveform is observed using a receiver with an equivalent minimum -3dB bandwidth of at least 18 GHz." Repeat in 86A.5.3.4, 86A.5.3.5 and 86A.5.3.6.

Proposed Response *Response Status* **W**

PROPOSED REJECT. It is not appropriate to measure a waveform in a bandwidth very different from the bandwidth that will be used in service. It is wrong to measure a noise (86A.5.3.5) in the wrong bandwidth. For DDPWS and transition time, the implementer can easily measure in a too-wide bandwidth and correct in software; the opposite is not accurate.

Cl **86A** *SC* **86A.5.3.8** *P* **433** *L* **33** # 341

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D** *HIST*

Terminology

SuggestedRemedy

Check that "Host electrical receiver signal tolerance" has the same name throughout

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Change "Host electrical receiver signal tolerance" to "Host input signal tolerance", twice here and in PICS. See also comments 382 and 865.

Cl **86A** *SC* **86A.5.3.8** *P* **433** *L* **35** # 607

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

"86A.5.3.8.1" and "86A.5.3.8.6" should be links

SuggestedRemedy

Make them links.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **86A** *SC* **86A.5.3.8.1** *P* **433** *L* **40** # 608

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

"at the Rx host (PMA) compliance point" is unclear

SuggestedRemedy

Change to "at the host input (PMA) compliance point"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **86A** *SC* **86A.5.3.8.1** *P* **433** *L* **42** # 342

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

Any PMD should provide the same BER performance at the MAC-PLS service interface irrespective of the number of lanes. It doesn't matter how the errors are divided among the lanes. See two other comments for 86, 87 and 88.

SuggestedRemedy

Change "Compliance is defined at an error ratio of 10-12." to "Compliance is defined at an aggregate BER (the average of the BER of each lane at the same OMA), of 10-12.". In Table 86A-4, delete "each lane".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Comments 300, 342, 305, 568 address related issues and must be resolved together. See dawe_01_0110 which presents the following:
Change "Compliance is defined at an error ratio of 10-12." to "Compliance is defined at an interface BER (the average of the BER of each lane when stressed), of 10-12.".
In Table 86A-4, delete "each lane" and change "BER" to "interface BER".
At the end of 86A.5.3.8.1, insert "The reference test procedure is described in detail for a single stressed lane. Either each Rx lane is stressed in turn or they are all stressed at the same time".
In 86A.5.3.8.6, after "operate the system with the test pattern specified in Table 86A-6.", add "Either each lane is stressed in turn while all are operated, or all can be stressed together. The BERs of all the lanes when stressed are averaged to form the interface BER. See 86.8.2.1."
.
In 86A.5.3.8.6, change "while monitoring the BER. The BER of a compliant host receiver remains below 10-12." to "while monitoring the BER of the lane(s). The aggregate BER is the average of the four or ten BERs, one of each stressed lane. The interface BER of a compliant host receiver remains below 10-12."

Cl **86A** *SC* **86A.5.3.8.2** *P* **434** *L* **2** # 609

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

"looking looking" is needless repetition

SuggestedRemedy

Delete one "looking"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **86A** *SC* **86A.5.3.8.3** *P* **435** *L* **1** # 343

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Apparent blank line

SuggestedRemedy

Remove any blank line or reduce white space in figure.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **86A** *SC* **86A.5.3.8.6** *P* **437** *L* **25** # 244

Turner, Edward J Gnodal Limited

Comment Type **E** *Comment Status* **D**

Table 86A-7. Thick vertical line between cells.

SuggestedRemedy

Use a thin vertical line between cells, as per tables in other clauses

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. [Editor's note: Clause/subclause numbers changed]

Cl **86A** *SC* **86A.6** *P* **437** *L* **41** # 344

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

Originally there was a 0.5 dB limit at low frequencies to make life easier for those doing the measurement. It then got scaled up when it should have remained at 0.5 dB and the frequency break point (presently 200 MHz) moved down.

SuggestedRemedy

Change 0.682 to 0.5, and 0.2 to 0.11 (twice). If there is an equivalent limit in 85 or 85A (I didn't find it), change that similarly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **86A** *SC* **86A.6** *P* **438** *L* **26** # 345

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

The recommended minimum of 0 dB for the host PCB, connector and HCB, between 10 MHz and 1 GHz, is both harmful and unnecessary. Below 2.5 GHz it is less than the HCB loss alone. It is difficult to imagine that the host PCB and connector have gain!
At 10 MHz the HCB reference loss is 0.041 while at 1 GHz it is about 0.42 dB. If the PCB loss is like the MCB loss but scaled to 3 dB at 7 GHz it would be 0.06 dB at 10 MHz and 0.79 dB at 1 GHz. With practical measurement uncertainty, it would be difficult to show compliance at 10 MHz (trying to measure 0.1 dB), and pointless (gain of host PCB, connector and HCB unlikely to be 1.2 dB) at 1 GHz. If the intention of the minimum loss spec is to damp reflections, the return loss specs are tighter at lower frequencies so a low frequency spec is not necessary.

SuggestedRemedy

Delete the row "0 0.01 <= f <= 1". Consider changing from -0.5 + 0.5f, 1 to 7 GHz, to -0.22 + 0.46f, 0.01 to 7 GHz.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Delete the row "0 0.01 <= f <= 1". Change from -0.5 + 0.5f, 1 to 7 GHz, to -0.22 + 0.46f, 0.01 to 7 GHz.

Cl **86A** *SC* **86A.6** *P* **438** *L* **34** # 868

Dudek, Michael QLogic Corporation

Comment Type **T** *Comment Status* **D**

This is actually 86A. In context where this is following immediately after the loss equation for the Host PCB, connector and HCB it would clarify the statement to add "or HCB after "without connector"

SuggestedRemedy

do as in comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. Change "(without connector)" to "(without connector or HCB)". [Editor's note: This comment is against 86A.6, hence corrected clause/subclause number fields to 86A]

Cl **86A** *SC* **86A.8.2.2** *P* **440** *L* **47** # 118

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D** *393*

IEEE Std 802.3ba-20xx.) should read "IEEE Std 802.3-2008.)"

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT. [Editor's note: Clause/subclause numbers changed, page and line numbers reversed]
IEEE Std 802.3ba-20xx is correct. See recently published amendments such as IEEE Std 802.3av-2009 Page 47.
See also comment 393.

Cl **86A** *SC* **86A.8.3** *P* **441** *L* **12** # 685

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

Missing shall statements for MO, HO, MD

SuggestedRemedy

add shall statements

Proposed Response *Response Status* **W**

PROPOSED REJECT. MO, HO and MD are included in the PICS table for the purpose of recording which options have been implemented rather than to confirm compliance with a particular requirement. Consequently it is not appropriate to have a "shall" statement in the text for this item.
In the same way, there is no "shall" statement corresponding to SR, LR, ER, etc. in the clause 52 PICS.

Cl **86A** *SC* **86A.8.4.1** *P* **441** *L* **31** # 686
Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**
Missing shall statements for SF2, d, sf3, AND sf4.

SuggestedRemedy
add shall statements

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE. Delete SF2, as there are no PPI-specific management functions, and management can control the associated PMD or PMA. 86A.1 says "The Delay and Skew requirements for nPPI are as in 86.3. .. The PMD functional specifications are as given in 86.5." and the "shall"s are in the references. Cannot change to e.g. "The Delay and Skew requirements for nPPI shall be as in 86.3." because the implementer does not control the requirements. In 86A.1, consider changing "The Delay and Skew requirements for nPPI are as in 86.3." to "The nPPI shall comply with the Delay, Skew and Skew Variation requirements in 86.3." and deleting SF4, as the PMD functional specifications in 86.5 do not place any requirements on the nPPI.

Cl **86A** *SC* **86A.8.4.3** *P* **442** *L* **44** # 684
Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**
missing shall statements for SEM2, SEM3, and SEM4

SuggestedRemedy
Add SHALL statement

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.
The shall statement for SEM2 is:
Page 426 line 50 "If boards are used which do not match the specifications given, the measurement results for nPPI shall be corrected for the differences".
No change needed

The shall statement for SEM3 is:
Page 427 line 1 "with differential insertion loss outside the limits given in 86A.5.1.1.2, such boards shall not be used."
Change "Individual insertion losses within spec" to "Individual insertion losses per 86A.5.1.1.2"

The shall statement for SEM4 is:
Page 427 line 1 "Boards that do not meet the specifications for mated HCB-MCB in 86A.5.1.1.2 shall not be used."
Change "Mated HCB-MCB within spec" to "Mated HCB-MCB per 86A.5.1.1.2"

Cl **87** *SC* **87** *P* **324** *L* **10** # 240
Turner, Edward J Gnodal Limited

Comment Type **E** *Comment Status* **D**
Table 87-13. Thick vertical line between cells.

SuggestedRemedy
Use a thin vertical line between cells, as per tables in other clauses

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **87** *SC* **87** *P* **324** *L* **53** # 250
Turner, Edward J Gnodal Limited

Comment Type **E** *Comment Status* **D**
Single quote marks are used, whereas elsewhere double quote marks are used.

SuggestedRemedy
Use double quote marks. Also at line 54 on the same page, and on page 325 at lines 15 and 16.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **87** *SC* **87.1** *P* **307** *L* **13** # 565
Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**
Since clause 87 has a single PMD type, the title of Table 87-1 "PMD type and associated clauses" seems inappropriate.

SuggestedRemedy
Change title to "Clauses associated with the 40GBASE-LR4 PMD"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.
Make the proposed change unless this title is changed by comment 498

Cl **87** *SC* **87.12.3** *P* **331** *L* **13** # 661
Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**
No corresponding SHALL statements for XLTP1 and XLTP4

SuggestedRemedy
add shall statements

Proposed Response *Response Status* **W**
PROPOSED REJECT.
XLTP1 and XLTP4 are included in the PICS to record which options have been implemented, rather than to confirm compliance with a particular requirement. Consequently it is not appropriate to have a shall statement in the text for these items.

Cl **87** *SC* **87.12.3** *P* **331** *L* **26** # 660
Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**
No corresponding SHALL statement to MD PIC

SuggestedRemedy
add SHALL statement

Proposed Response *Response Status* **W**
PROPOSED REJECT.
MD is included in the PICS to record which options have been implemented, rather than to confirm compliance with a particular requirement. Consequently it is not appropriate to have a shall statement in the text for these items.

Cl **87** *SC* **87.12.3** *P* **331** *L* **6** # 665
Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**
No corresponding SHALL statements for LR4, INS

SuggestedRemedy
add shall statements

Proposed Response *Response Status* **W**
PROPOSED REJECT.
The entries LR4 and INS are all included in the PICS table for the purpose of recording which options have been implemented rather than to confirm compliance with a particular requirement. Consequently it is not appropriate to have a "shall" statement in the text for these items.

Cl **87** *SC* **87.12.4** *P* **332** *L* **2** # 570
Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**
In the title, "types 40GBASE-LR4" should be "type 40GBASE-LR4"

SuggestedRemedy
Change "types 40GBASE-LR4" to "type 40GBASE-LR4"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **87** *SC* **87.12.4.1** *P* **332** *L* **10** # 666
Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**
No corresponding SHALL statements for XLF1 and XLF2

SuggestedRemedy
add shall statements

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.
XLF2 (integration of management functions) is included in the PICS to record which options have been implemented, rather than to confirm compliance with a particular requirement. Consequently it is not appropriate to have a shall statement in the text for this item.
If not changed by comment 498, change "A complete Physical Layer comprises the PMD and other sublayers indicated in Table 87-1"
to "A complete Physical Layer shall comprise the PMD and other sublayers indicated in Table 87-1".

see response to 673

Cl **87** *SC* **87.12.4.2** *P* **333** *L* **6** # 667

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

No corresponding SHALL statements for XLM1

SuggestedRemedy

add shall statements

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
In 87.4 change "Mapping of MDIO control variables to PMD control variables is shown in Table 87-2. Mapping of MDIO status variables to PMD status variables is shown in Table 87-3"
to "If the MDIO interface is implemented, the mapping of MDIO control variables to PMD control variables shall be as shown in Table 87-2. If the MDIO interface is implemented the mapping of MDIO status variables to PMD status variables shall be as shown in Table 87-3".

see also comment 674

Cl **87** *SC* **87.12.4.4** *P* **334** *L* **15** # 662

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

No corresponding SHALL statement for XLOM5

SuggestedRemedy

add shall statement

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
In 87.8.5 change "OMA is defined in ..."
to "OMA shall be as defined in...".

see also comment 668

Cl **87** *SC* **87.12.4.4** *P* **334** *L* **19** # 663

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

No corresponding SHALL statement for XLOM7

SuggestedRemedy

add shall statement

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
In 87.8.8 change "The RIN measurement methodology is defined in ..."
to "The RIN measurement methodology shall be as defined in...".

see also comment 669

Cl **87** *SC* **87.12.4.6** *P* **335** *L* **8** # 664

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

No corresponding SHALL statement for XLOC2

SuggestedRemedy

add shall statement

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
In 87.11.1 change "and the requirements in Table 88-15 where they differ" to "and shall meet the requirements in Table 88-15 where they differ" .

see also 671

Cl **87** *SC* **87.2** *P* **308** *L* **42** # 303

Dawe, Piers J G Independant

Comment Type **TR** *Comment Status* **D**

The 40GBASE-LR4 service interface should be like the 10GBASE-LR service interface. For 40GBASE-LR4, draft says "When SIGNAL_DETECT=FAIL, the IS_UNITDATA_i.indication parameters are undefined, but consequent actions interpret IS_UNITDATA_i.indication as a logic zero." while 52.1.1.3.1 says simply "When SIGNAL_DETECT = FAIL, PMD_UNITDATA.indication(rx_bit) is undefined.". Note that there is no specification for consequent actions; this is deliberate, as the "consequent actions" includes a CDR, which needs transitions. There is no requirement for squelch. (Editorial: should have been "a zero" not "a logic zero".)

SuggestedRemedy

Delete "but consequent actions interpret IS_UNITDATA_i.indication as a logic zero" here and in 88.2. There is another comment for the electrical PMDs.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **87** *SC* **87.5.4** *P* **311** *L* **41** # 841

Dudek, Michael QLogic Corporation

Comment Type **T** *Comment Status* **D**

There is no reference to the signal detect requirements

SuggestedRemedy

Insert at the end of the first sentence. "that meet the requirements of table 87-4"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
[Editor's note: This comment is against 87.5.4, hence updated the subclause number field accordingly]
Table 87-4 does not place requirements on the optical signals, but rather on the SIGNAL_DETECT function.

Change "SIGNAL_DETECT shall be a global indicator of the presence of optical signals on all four lanes." to "SIGNAL_DETECT shall be a global indicator of the presence of optical signals on all four lanes. The value of the SIGNAL_DETECT parameter shall be generated according to the conditions defined in Table 87-4."

See also comment 846

Cl **87** *SC* **87.6** *P* **38** *L* **313** # 122

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

Change the text of the Note to read as follows: NOTE - There is no requirement to associate a particular electrical lane with a particular optical lane, as the PCS is capable of receiving lanes in any arrangement. Also, clarify what lanes are meant - are these PMD lanes or PCS lanes?

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
These lanes are clearly not PCS lanes as there are 20 PCS lanes for 100GBASE-R.
Change "NOTE-There is no requirement to modulate a particular electrical lane on to a particular optical lane, as the PCS is capable of receiving with the lanes in any arrangement." to "NOTE-There is no requirement to associate a particular electrical lane with a particular optical lane, as the PCS is capable of receiving lanes in any arrangement."

see also comment 121

Cl **87** *SC* **87.7.1** *P* **314** *L* **30** # 792

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

To make a future 40GBASE-LR4 module with an unretimed interface feasible, the transmitter power levels of 40GBASE-LR4 are proposed to be increased by 0.3 dB, together with an increase of the maximum TDP by 0.3 dB.
A related comment proposes to change the J2 and J9 limits of the XLPPI interface.
See king_01_0110.pdf

SuggestedRemedy

In Table 87-7 change:
Total average launch power (max) from 8.3 to 8.6 dBm
Average launch power, each lane (max) from 2.3 to 2.6 dBm
Average launch power, each lane (min) from -7 to -6.7 dBm
Optical Modulation Amplitude (OMA), each lane (max) from 3.5 to 3.8 dBm
Optical Modulation Amplitude (OMA), each lane (min) from -4 to -3.7 dBm
Launch power in OMA minus TDP, each lane (min) from -4.8 to -4.5 dBm
Transmitter and dispersion penalty (TDP), each lane (max) from 2.3 to 2.6 dB
RIN20OMA (max) from -128 to -130 dB/Hz
In Table 87-8 change:
Damage threshold (min) from 3.3 to 3.6 dBm
Average receive power, each lane (max) from 2.3 to 2.6 dBm
Average receive power, each lane (min) from -13.7 to -13.4 dBm
Receive power, each lane (OMA) (max) from 3.5 to 3.8 dBm
Receiver sensitivity (OMA), each lane (max) from -9.9 to -9.6 dBm
Vertical eye closure penalty, each lane from 1.6 to 1.9 dB
In Table 87-9 change:
Power budget (for max TDP) from 9 to 9.3 dB
Allocation for penalties (for max TDP) from 2.3 to 2.6 dB
See king_01_0110.pdf for further details.
Note, there is a related comment to modify the J2 and J9 values for the XLPPI interfaces.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change values in Table 87-7 Table 87-8, and Table 87-9 as described in Anslow_06_0110, and as amended after consideration by task force of relevant supporting material (eg King_01_0110, Petrilla_01_0110).

Cl **87** *SC* **87.7.1** *P* **314** *L* **42** # 304

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

TDP limit seems demanding, especially for QSFP module

SuggestedRemedy

Consider increasing TDP max from 2.3 to 2.5 dB, with appropriate changes to other parameters e.g. VECP.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
see response to comment 792

Cl **87** *SC* **87.7.1** *P* **314** *L* **54** # 842

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D**

The hit ratio for the eye mask is not defined.

SuggestedRemedy

Add a footnote to the transmitter eye mask definition. Footnote to say "The eye mask is defined at a 5 e-5 hit ratio".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
[Editor's note: This comment is against 87.7.1, hence updated the subclause number field accordingly]

The eye mask definition and methodology is referenced from 87.1.1. It points to section 86.8.4.6.1 which defines the 5 e-5 hit ratio.

Cl **87** *SC* **87.7.2** *P* **1** *L* **314** # 126

Hajduczenia, Marek ZTE Corp.

Comment Type **E** *Comment Status* **D**

is considered compliant (e.g., operating at 12.5km meets the operating range requirement of 2m to 10km).change to read"is considered compliant e.g., operating at 12.5km meets the operating range requirement of 2m to 10km."

SuggestedRemedy

Per comment, no need to hide the example in braces.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Doesn't affect meaning, and current text follows format of clause 52

Cl **87** *SC* **87.7.2** *P* **11** *L* **315** # 125

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

Table 87-8 is missing a Type column, which would include information on whether the given value is max/min or otherwise. See e.g. tables in clause 86 or others for comparisonSimilar comment against Table 87-7, page 314/17

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The description column clearly says whether the parameter is a max or min spec

Cl **87** *SC* **87.7.2** *P* **315** *L* **43** # 843

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D**

Stressed Eye Jitter used in this clause appears to be the same as J2 used in clause 86. J2 is a more descriptive name.

SuggestedRemedy

Change Stressed eye jitter to J2 throughout this clause.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. [Editor's note: This comment is against 87.7.2, hence updated the subclause number field accordingly]

In Table 87-8, and in note e, change "Stressed eye jitter " to Stressed eye jitter J2"

Cl **87** *SC* **87.8.1** *P* **316** *L* **49** # 566

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

In Table 87-10 the subclause for pattern 5 should be 82.2.10

SuggestedRemedy

Change "82.2.11" to "82.2.10"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **87** *SC* **87.8.1** *P* **317** *L* **22** # 567

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

In Table 87-11 the items "Calibration of OMA for receiver tests" and "Vertical eye closure penalty calibration" do not have an entry in the "Related subclause" column. Also applies to Table 88-11

SuggestedRemedy

Make them both "87.8.11" Also applies to Table 88-11.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **87** *SC* **87.8.11** *P* **320** *L* **17** # 305

Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**

Any PMD should provide the same BER performance at the MAC-PLS service interface irrespective of the number of lanes. It doesn't matter how the errors are divided among the lanes. See other comment for 86.8.4.7 and 86A.5.3.8.1.

SuggestedRemedy

In the second paragraph of 87.8.11 change "For each lane, the stressed receiver sensitivity is defined with the transmit section in operation on all four lanes and with the receive lanes not under test also in operation." to "The BER of each lane is defined with the transmit section in operation on all four lanes and with the receive lanes not under test also in operation.". At the end of the first paragraph of 87.8.11 insert "The aggregate BER of the PMD receiver is the average of the BER of all receive lanes at the same receive OMA. At the stressed receiver sensitivity (OMA) specified in Table 87-8, a compliant receiver's aggregate BER does not exceed 10^-12". In Table 87-8 and Table 88-8, entries for stressed receiver sensitivity (OMA), delete "each lane". Consider doing the same for the receiver sensitivity (OMA) entries in both tables.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Comments 300 342 305 and 568 propose alternative solutions and need to be resolved together

Cl **87** *SC* **87.8.11.1** *P* **320** *L* **42** # 306
Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**
"the data rate" (40 Gb/s or 100 Gb/s) is irrelevant here.

SuggestedRemedy
Change to "the signaling rate". Also 87.8.11.2 bullet 3.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **87** *SC* **87.8.11.1** *P* **320** *L* **48** # 307
Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**
Too many "should"s allow uncertainty.

SuggestedRemedy
Change "should be less than 0.25 UI" to "should be less than 0.25 UI". Consider reducing the 0.25 UI.

Proposed Response *Response Status* **W**
PROPOSED REJECT.
Commenter has not proposed any change to the draft

Cl **87** *SC* **87.8.11.1** *P* **320** *L* **49** # 308
Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**
"data dependent effects should be minimal, and short data patterns can be used": if it's a test pattern it's not data.

SuggestedRemedy
Change to "pattern dependent effects should be minimal, and short patterns can be used".

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **87** *SC* **87.8.11.2** *P* **323** *L* **1** # 309
Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**
The fraction of VECP created by the filter has an important effect on SRS stress.

SuggestedRemedy
Change "should be created" to "is created".

Proposed Response *Response Status* **W**
PROPOSED REJECT.
Current text follows clause 52, see 52.9.9.2

Cl **87** *SC* **87.8.11.2** *P* **323** *L* **15** # 310
Dawe, Piers J G Independant

Comment Type **T** *Comment Status* **D**
Too many "should"s allow uncertainty.

SuggestedRemedy
Change "should result" to "results".

Proposed Response *Response Status* **W**
PROPOSED REJECT.
Current text follows clause 52, see 52.9.9.2

Cl **87** *SC* **87.8.11.2** *P* **323** *L* **26** # 845
Dudek, Michael QLogic Corporation

Comment Type **T** *Comment Status* **D**
What wavelength the adjacent channels are set to is also important.

SuggestedRemedy
Change to "set to the required OMA and wavelength as described"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.
[Editor's note: This comment is against 87.8.11.2, hence updated the subclause number field accordingly]
Change "set to the required OMA as described" to "set to the required OMA and wavelength as described"

Cl **87** *SC* **87.8.11.3** *P* **323** *L* **34** # 311

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Clean

SuggestedRemedy

clean

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
(follows clause 52 format)

Cl **87** *SC* **87.8.11.4** *P* **324** *L* **14** # 794

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

Stress receiver sensitivity test for frequency greater than loop BW defines Sj in the range of 0.05 UI to 0.15 UI. Defining the stress receiver sensitivity with so much slop means the test will not be consistent and higher amount of SJ will penalize the receiver for no good reason. Why do we need to carry this 10 years old legacy when test equipment where arcade and CL86A already take advantage of this?

SuggestedRemedy

propose to set SJ to 0.05 UI as illustrated by Figure 86A-10 and Table 86A-7

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

In Table 87-13:

change "2x10^5/ f + S - 0.05" to "2x10^5/ f"

also change "0.05 <= S <= 0.15" to "0.05"

Remove footnote a

Modify the procedure for stressed receiver sensitivity measurement in 87.8.11 accordingly

Editors note: Draft text and content will be provided, to facilitate task force consideration, in King_02_0110

See also comment 671

Cl **87** *SC* **87.8.5** *P* **53** *L* **317** # 127

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

OMA is as defined in 52.9.5 for measurement with a square wave (8 ones, 8 zeros) test patternchange to read "OMA is as defined in 52.9.5 for measurement with a square wave (see Table 87-11) test pattern

SuggestedRemedy

no need to repeat informatuion included already in Table 87-11

Proposed Response *Response Status* **W**

PROPOSED REJECT.
OMA isn't exactly as defined in 52.9.5, there is an exception which is noted in the same sentence.

Cl **87** *SC* **87.8.6.4** *P* **319** *L* **28** # 568

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

For the measurements of TDP and SRS in clauses 86, 87 and 88 clarification is needed that the BER of 1E-12 should be measured for the bits of the lane under test and not for the bits of all of the lanes together.

SuggestedRemedy

In 87.8.6.4 and 88.8.5.4 change "(transmit and receive), and each lane is tested individually using an optical filter to separate the lane under test from the others." to "(transmit and receive), each lane is tested individually using an optical filter to separate the lane under test from the others, and the BER of 1 x 10--12 is for the lane under test on its own." Add to the end of the first paragraph of 87.8.11 "The BER is required to be met for the lane under test on its own."
Add an additional exception in 86.8.4.4 "f) The BER of 1 x 10--12 is for the lane under test on its own". Insert an additional exception in 86.8.4.7 and 86.8.4.8 "The BER must remain below 1 x 10--12 for the lane under test on its own".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Comments 300 342 305 and 568 propose alternative solutions and need to be resolved together

Cl **87** *SC* **87.8.7** *P* **319** *L* **33** # 844

Dudek, Michael QLogic Corporation

Comment Type **E** *Comment Status* **D**

Two "tables"

SuggestedRemedy

delete one

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. [Editor's note: This comment is against 87.8.7, hence updated the subclause number field accordingly]

Cl **87** *SC* **87.8.7** *P* **319** *L* **33** # 569

Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**

"Table" twice in "given in Table Table 87--7"

SuggestedRemedy

Change to "given in Table 87--7"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **88** *SC* **88.11.3** *P* **354** *L* **45** # 347

Nikolich, Paul YAS Broadband Ventu

Comment Type **TR** *Comment Status* **D**

Examples of an MDI include the following:a) Connectorized fiber pigtail, b) PMD receptacle Perhaps it is defined elsewhere in the 802.3 Standard, but I could not find a definition or a reference for a "connectorized fiber pigtail".

SuggestedRemedy

Add a definition or appropriate references for a "connectorized fiber pigtail."

Proposed Response *Response Status* **W**

PROPOSED REJECT.
[Editor's note: Subclause changed from "88.11.3 Medium Dependent Inter" to "88.11.3"]

The term "connectorized fiber pigtail" is readily understandable without further definition. It has been used in five clauses of the base standard (52, 53, 58, 59, 60) and also in clause 75 of IEEE Std 802.3av-2009 without further explanation.

Cl **88** *SC* **88.12.3** *P* **356** *L* **6** # 672

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

No corresponding SHALL statements for LR4, ER4, INS, CTP1, CTP4

SuggestedRemedy

add shall statements

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The entries LR4, ER4, INS, CTP1, CTP4 are all included in the PICS table for the purpose of recording which options have been implemented rather than to confirm compliance with a particular requirement. Consequently it is not appropriate to have a "shall" statement in the text for these items.
In the same way, there is no "shall" statement corresponding to SR, LR, ER, etc. in the clause 52 PICS.

Cl **88** *SC* **88.12.4.1** *P* **357** *L* **10** # 673

Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**

No corresponding SHALL statements for CF1 and CF2.

SuggestedRemedy

Add shall statements

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
CF2 (Integration with management functions) is included in the PICS table for the purpose of recording whether this option has been implemented rather than to confirm compliance with a requirement. Consequently it is not appropriate to have a "shall" statement in the text for this item.

If not changed by comment 498, in 88.1 change "A complete physical layer comprises the PMD and other sublayers indicated in Table 88-1" to "A complete physical layer shall comprise the PMD and other sublayers indicated in Table 88-1."

Cl **88** *SC* **88.12.4.2** *P* **358** *L* **6** # 674
Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**
No corresponding SHALL statements for CM1.

SuggestedRemedy
Add shall statements

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.
In 88.4 change: "Mapping of MDIO control variables to PMD control variables is shown in Table 88-2. Mapping of MDIO status variables to PMD status variables is shown in Table 88-3."
to:
"If the MDIO interface is implemented, the mapping of MDIO control variables to PMD control variables shall be as shown in Table 88-2 and the mapping of MDIO status variables to PMD status variables shall be as shown in Table 88-3."

Cl **88** *SC* **88.12.4.5** *P* **359** *L* **12** # 668
Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**
No corresponding SHALL statements for COM4

SuggestedRemedy
add shall statement

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.
In 88.8.4 change "OMA is as defined in ..." to "OMA shall be as defined in ..."

Cl **88** *SC* **88.12.4.5** *P* **359** *L* **18** # 669
Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**
No corresponding SHALL statement for COM7

SuggestedRemedy
add shall statement

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.
In 88.8.7 change "The RIN measurement methodology is as defined in ..." to "The RIN measurement methodology shall be as defined in ..."

Cl **88** *SC* **88.12.4.5** *P* **359** *L* **22** # 572
Anslow, Peter Nortel Networks

Comment Type **E** *Comment Status* **D**
For COM9 the subclause should be 88.8.10 not 88.8.9

SuggestedRemedy
Change 88.8.9 to 88.8.10

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.
See also comment 670.

Cl **88** *SC* **88.12.4.5** *P* **359** *L* **22** # 670
Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**
The subclause reference for COM9 appears to be incorrect as it should be to Stressed Receiver Sensitivity, i.e 88.8.10

SuggestedRemedy
correct subclause reference to 88.8.10

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.
See also comment 572.

Cl **88** *SC* **88.12.4.7** *P* **360** *L* **8** # 671
Dambrosia, John Force 10 Networks Inc

Comment Type **TR** *Comment Status* **D**
No corresponding SHALL statement for COC2,

SuggestedRemedy
add shall statement

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.
The normative requirements on the channel are contained in Table 88-14 with associated PICS entry COC1. Subclause 88.11.1 lists fibre types that meet these requirements.
Remove PICS entry COC2.

Cl **88** *SC* **88.3.1** *P* **339** *L* **6** # 119

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

in some of the clauses there are references to units of "BT" (bit times) and in some locations there are references to units of "bit times"(1) BT (bit times) used on 363/23, 29/41,(2) bit time used on 365/23, 365/26, 365/29, 365/33, 365/34, 365/39, 365/43, 134/43, 225/4, 225/5, 237/27, 227/28, 237/31, 237/32,

SuggestedRemedy

Use a consistent designation across clauses. The use of "BT" is suggested.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
[Editor's Note: Page changed from 6 to 339 and Line changed from 339 to 6]
In clause 4 (29/41) the format used matches that used in NOTE 4 in the base standard. Likewise, in clause 4A (363/23) the format used matches that used in NOTE 1 to NOTE 3 in the base standard. Also, in clause 74 "BT" is used to be consistent with clause 74 in the base standard.
The remainder of the draft uses "bit time".

However, there is an inconsistency in whether the term contains a hyphen.
In the base standard "bit time" has 335 ocurrences and "bit-time" has 10 ocurrences.

Change all ocurrences of "bit-time" to "bit time".
Clause 81 - 2 instances
Clause 82 - 1 instance
Clause 84 - 1 instance
Clause 85 - 1 instance
Clause 86 - 3 instances
Clause 87 - 2 instances
Clause 88 - 2 instances

Cl **88** *SC* **88.3.2** *P* **339** *L* **10** # 120

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

The text in 88.3.2 is clear, but it is always better to have such skew requirements presented in the form a table.

SuggestedRemedy

Add a table with the skew requirements into all clauses which contain PMD definitions and contain similar textual description to 88.3.2

Proposed Response *Response Status* **W**

PROPOSED REJECT.
[Editor's Note: Page changed from 10 to 339 and Line changed from 339 to 10]
The skew requirements are presented in a table in subclause 80.5 which is referenced in each of the clauses where skew requirements are called out. However, many of the individual requirements have conditions that must be fulfilled before the limit applies, e.g. "If the PMD service interface is physically instantiated so that the Skew at SP2 can be measured, then the Skew at SP2 is ..." this is best captured in the textual form as in the current draft.

Cl **88** *SC* **88.5.4** *P* **341** *L* **46** # 846

Dudek, Michael QLogic Corporation

Comment Type **T** *Comment Status* **D**

There is no reference to the signal detect requirements

SuggestedRemedy

Insert at the end of the first sentence. "that meet the requirements of table 88-4"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
[Editor's note: Subclause changed from 88 to 88.5.4.]
Table 88-4 does not place requirements on the optical signals, but rather on the SIGNAL_DETECT function.

Change "SIGNAL_DETECT shall be a global indicator of the presence of optical signals on all four lanes." to "SIGNAL_DETECT shall be a global indicator of the presence of optical signals on all four lanes. The value of the SIGNAL_DETECT parameter shall be generated according to the conditions defined in Table 88-4."

See also comment 841

Cl **88** *SC* **88.5.8** *P* **342** *L* **43** # 123

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

(1) Change the title of subclause 88.5.8 to read"PMD lane-by-lane transmit disable function (optional)."Comment applicable to 342/42, 228/15, 242/7, 285/32, 312/37, 342/43(2) Unify the call to "lane-by-lane". Some clauses use "lane by lane", some "lane-by-lane". Suggest to use "lane-by-lane" consistently. Scrub the draft as needed.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
[Editor's Note: Page changed from 43 to 342 and Line changed from 342 to 43]
Change "lane by lane" to "lane-by-lane".
Clause 86 - 3 instances
Clause 87 - 2 instances
Clause 88 - 3 instances

Cl **88** *SC* **88.6** *P* **343** *L* # 753

Karocki, Piotr TBD Polska

Comment Type **T** *Comment Status* **D**

table 88.5 and table 88.7.
My knowledge is too small to be sure, but 10 gigabit/sec has L for 1310 nm, and E for 1550 nm. Now, in 100 Gb/s, E and L has same wavelenghts, and only difference is maximum distance and such parameters as sensitivity of receiver (table 88.8). But, if same wavelength, why E? I thought that E means extra long wavelength (at least in 10 Gb/s).

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Since the 100GBASE-LR4 and 100GBASE-ER4 PMDs use identical wavelengths, they cannot be distinguished by means of a letter indicating wavelength.
In the 40GBASE and 100GBASE nomenclature as explained in 80.1.4 the L does not stand for long wavelength.
This nomenclature was adopted by the task force in May 2008 (See slide 8 of Ganga_02_0508 and Motion #2 in May 2008 minutes).
The nomenclature was further discussed in July 2009 with the following result:
Straw Poll #1:
The task force was asked to indicate a preference between the options:
- Leave the nomenclature unchanged;
- Change the nomenclature to one of 100GBASE-LRE4, 100GBASE-LR4E, 100GBASE-LR4-E

Results
All in the room: Unchanged - 25, Change - 25
802.3 voters: Unchanged - 26, Change - 26

See also comment 391.

Cl **88** *SC* **88.6** *P* **343** *L* **47** # 121

Hajduczenia, Marek ZTE Corp.

Comment Type **T** *Comment Status* **D**

Change the text of the Note to read as follows: NOTE - There is no requirement to associate a particular electrical lane with a particular optical lane, as the PCS is capable of receiving lanes in any arrangement. Also, clarify what lanes are meant - are these PMD lanes or PCS lanes?

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
[Editor's note: Page changed from 47 to 343 and Line changed from 343 to 47]
These lanes are clearly not PCS lanes as there are 20 PCS lanes for 100GBASE-R.
Change "NOTE-There is no requirement to modulate a particular electrical lane on to a particular optical lane, as the PCS is capable of receiving with the lanes in any arrangement." to "NOTE-There is no requirement to associate a particular electrical lane with a particular optical lane, as the PCS is capable of receiving lanes in any arrangement."

Cl **88** *SC* **88.7** *P* **344** *L* **2** # 124

Hajduczenia, Marek ZTE Corp.

Comment Type **E** *Comment Status* **D**

considered compliant (e.g., a 100GBASE--LR4 PMD operating at 12.5km meets the operating range requirement of 2m to 10km). change to read"considered compliant, e.g., a 100GBASE--LR4 PMD operating at 12.5km meets the operating range requirement of 2m to 10km."

SuggestedRemedy

Per comment. No need to hide the example in braces.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
[Editor's note: Page changed from 2 to 344 and Line changed from 344 to 2]
Putting the example in brackets makes the sentence easier to read. This is also the format used in the base standard (see 52.5)

Cl **88** *SC* **88.7** *P* **344** *L* **8** # 312

Dawe, Piers J G Independant

Comment Type **E** *Comment Status* **D**

Title says "100GBASE-LR4 operating range" yet table covers 100GBASE-ER4 also.

SuggestedRemedy

Change title

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the title of Table 88-6 from "100GBASE-LR4 operating range" to "100GBASE-LR4 and 100GBASE-ER4 operating ranges"

Cl **88** *SC* **88.8.10** *P* **351** *L* **19** # 241

Turner, Edward J Gnodal Limited

Comment Type **E** *Comment Status* **D**

Table 88-13. Thick vertical line between cells.

SuggestedRemedy

Use a thin vertical line between cells, as per tables in other clauses

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
[Editor's note: Subclause changed from 88 to 88.8.10]
See also comments 244 and 240

Cl **88** *SC* **88.8.10** *P* **351** *L* **21** # 789

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

Current 10 MHz jitter tolerance corner frequency leads to higher power and complexity for the receiver. The CRU BW was increased by scaling CRU BW up by factor of 10.7/10.3125 from 10 GbE but the VCO noise and other power supply noise do not scale up. We are burdening the receiver for no clear benefit for the transmitter. The 10 MHz burden will remain even in the case of future generation where the ASIC/Serdses run at 25 G with DFE implementation!

SuggestedRemedy

Propose to consider corner frequency of 7 MHz instead of current 10 MHz and change 100 KHz to 70 KHz. Table 83-13 becomes:
f<70 KHz not defined
70 KHz <f<=7 MHz 7*10^4/f + S - 0.05
7 MHz<f<10 S=0.05 (target value)

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The relative merits of 7 vs. 10 MHz corner frequencies depend on the implementation details of the clock extraction unit. Comments 127, 128 and 129 against D 2.2 proposed to change the corner frequency in Clause 88 from 10MHz to 7MHz and were disscussed by the Task Force Optical track during the Chicago meeting in September 2009.
The result of a vote was:
The Task Force voted on whether to:
A - Leave the CRU corner frequency at 10 MHz and correct the formula in Table 88-13
B - Change the CRU corner frequency to 7 MHz in a consistent manner in clause 88
A 9
B 1

Cl **88** *SC* **88.8.10** *P* **351** *L* **23** # 790

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

Stress receiver sensitivity test for frequency greater than loop BW defines Sj in the range of 0.05 UI to 0.15 UI. Defining the stress receiver sensitivity with so much slop means the test will not be consistent and higher amount of SJ will penalize the receiver for no good reason. Why do we need to carry this 10 years old legacy when test equipment where arcade and CL86A already take advantage of this?

SuggestedRemedy

propose to limit max SJ to 0.05 UI, Figure 86A-10 and Table 86-7 can be used as guide line. Table 88-13 then becomes:
f<100 KHz Not defined
100 KHz<f<=10 MHz 5x10^5/f - 0.05
10 MHz<f<10 LB 0.05

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
In Table 88-13:
change "5x10^5/ f + S - 0.05" to "5x10^5/ f"
also change "0.05 <= S <= 0.15" to "0.05"
Remove footnote a
Modify the procedure for stressed receiver sensitivity measurement in 87.8.11 accordingly.
See also comment 794

Cl **88** *SC* **88.8.10** *P* **351** *L* **24** # 571

Anslow, Peter Nortel Networks

Comment Type **T** *Comment Status* **D**

"per the methods of 52.9.9.3." should be "per the methods of 87.8.11.2." as in king_01_0709.pdf

SuggestedRemedy

Change "per the methods of 52.9.9.3." to "per the methods of 87.8.11.2."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
If footnote is not removed by comment 790 then make proposed change.

Cl **88** *SC* **88.8.5** *P* **350** *L* **12** # 787

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

The CRU BW for the TDP measurement is defined to be 10 MHz and will result in higher power more complex receiver. The argument for having higher CRU BW is to filter power supply and VCO noise, but noise sources are not scaling when operation speed increased from 10.3125 to 25.7 Gigabud. So there is very little benefit of having higher CRU BW but a definite penalty. The 10 MHz burden will remain even in the case of future generations where ASIC/SerDes operate at 25 G with DFE receiver unless we require the CDR in the module to absorb the SJ with phase FIFO!

SuggestedRemedy

Propose to consider CRU BW 7 MHz instead of current 10 MHz. Higher CRU BW has very little benefit on the VCO noise and power supply noise but significant penalty on the receiver, see ghiasi_01_0110

Proposed Response *Response Status* **W**

PROPOSED REJECT.
See response to comment 789

Cl **88** *SC* **88.8.5.2** *P* **349** *L* **30** # 847

Dudek, Michael QLogic Corporation

Comment Type **TR** *Comment Status* **D**

DGD is an important channel characteristic for longer fibers and the test channel DGD is not specified thereby potentially leading to varying test results.

SuggestedRemedy

Add an extra column to table 88-12. DGD(max). Value to be 8ps for both lengths.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
[Editor's note: Subclause changed from 88 to 88.8.5.2]
Table 88-12 defines a channel for transmitter compliance testing. DGD is a parameter of the optical channel which is converted in to a penalty by the optical receiver. Consequently, it is inappropriate to apply the maximum link DGD to the channel for a transmitter compliance requirement. Long fibres are specified for maximum mean DGD (usually in ps per sqrt(km)) rather than maximum DGD which is theoretically unbounded. From the curves on slides 5 and 8 of anslow_04_1108.pdf a maximum DGD of 3 ps gives a penalty below 0.1 dB. Using a peak to mean value of 3.75 (to give 2.6 sec/year above the "peak"), gives a requirement of 0.8 ps maximum mean DGD. This value can be achieved using a fibre of length 60 km and a mean DGD coefficient of 0.1 ps per sqrt(km) which is readily obtainable.

Add a new column to Table 88-12 for the "maximum mean DGD" with a value of 0.8 ps for both 100GBASE-LR4 and 100GBASE-ER4.
Also add a new paragraph at the end of 88.8.5.2: "The mean DGD of the channel is to be less than the value specified in Table 88-12."

Cl **88** *SC* **88.8.8** *P* **350** *L* **45** # 788

Ghiasi, Ali Broadcom

Comment Type **TR** *Comment Status* **D**

Transmitter eye diagram is measured CRU BW of 10 MHz will result to more complex higher power receiver implementations. D2.1 and comment 128 will result to more complex higher power receiver implementations. Increased CRU BW has very little benefit on the VCO noise. The 10 MHz burden will remain even in the case of future generations where ASIC/SerDes operate at 25 G with DFE receiver!

SuggestedRemedy

Propose CRU BW 7 MHz instead of current 10 MHz. Higher CRU BW has very little benefit on the VCO noise and power supply noise but significant penalty on the receiver, see ghiasi_01_0110

Proposed Response *Response Status* **W**

PROPOSED REJECT.
See response to comment 789

Cl **A** *SC* **A** *P* **361** *L* **10** # 256

Young, George AT&T

Comment Type **E** *Comment Status* **D**

Correct the title of the G.709 reference document to be as specified by ITU-T

SuggestedRemedy

Change the title of this reference to read "Interfaces for the Optical Transport Network (OTN)".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.