

Cl 00 SC 0 P L # 4  
 Anslow, Peter Ciena  
 Comment Type E Comment Status X  
 IEEE Std 802.3ba is now approved so references to it should include 2010  
 SuggestedRemedy  
 Change "IEEE Std 802.3ba-201x" to "IEEE Std 802.3ba-2010" throughout the draft. (9 instances)  
 Proposed Response Response Status O

Cl 00 SC 0 P L # 65  
 Diab, Wael Broadcom  
 Comment Type E Comment Status X  
 Why are we using colored text in the clean draft, specifically green. I understand the coloring when a diff is done but not on the base  
 SuggestedRemedy  
 Pls. remove the coloring on the clean document  
 Proposed Response Response Status O

Cl 00 SC 0 P L # 66  
 Diab, Wael Broadcom  
 Comment Type E Comment Status X  
 Change "802.3ba-201x" to "802.3ba-2010"  
 SuggestedRemedy  
 Per comment  
 Proposed Response Response Status O

Cl 00 SC 0 P L # 69  
 Diab, Wael Broadcom  
 Comment Type T Comment Status X  
 The reference to ITU-T G.693 is listed in the bibliography however it appears in normative text.  
 SuggestedRemedy  
 Either change the reference from a bibliography to a normative reference or change the way the reference is used in the document so it is truly a bibliography  
 Proposed Response Response Status O

Cl 00 SC 0 P1 L1 # 9  
 Booth, Bradley AppliedMicro  
 Comment Type E Comment Status X  
 No space required between the D and the draft number.  
 SuggestedRemedy  
 For the next revision, should be Dx.y with no space.  
 Proposed Response Response Status O

Cl 00 SC 0 P1 L30 # 60  
 Dawe, Piers IPtronics  
 Comment Type TR Comment Status X  
 An objective is "Provide Physical Layer specification which support 40 Gb/s operation over at least 2 km on SMF" and from the PAR, "5.4 Purpose: This project will define a 40 Gb/s serial PMD that supports a link distance of at least 2km over single-mode fiber ... which will enable interconnection ...". This draft allows excessive penalties and I do not believe it provides a robust interoperability spec. The transmitter can pass the draft and be poor, and the receiver can pass the draft and fail to receive that transmitter after the fibre. Some changes are needed to come up to 802.3's traditional standards for an interoperability spec.  
 SuggestedRemedy  
 See other comments for remedies  
 Proposed Response Response Status O

Cl 00 SC 0 P15 L1 # 64  
Diab, Wael Broadcom

Comment Type E Comment Status X

The term "Revisions" has a specific meaning to indicate a revision to 802.3 (like what we would do in a maintenance project). I believe that this is an ammendment. I believe the intent is to describe how change instructions would work.

SuggestedRemedy

Suggest changing the term "Revisions" to "Changes"

Proposed Response Response Status O

Cl 00 SC 0 P44 L53 # 78  
Maguire, Valerie Siemon

Comment Type E Comment Status X

The current revision of '568-B.3 is ANSI/TIA-568-C.3-2008. Table 1 of of '568-C.3 still contains the 0.5dB/km attenuation for outside plant cables. Note that "EIA" no longer appears in the title of the Standard.

SuggestedRemedy

Replace "ANSI/TIA/EIA 568-B.3-2000" with "ANSI/TIA-568-C.3-2008".

Proposed Response Response Status O

Cl 01 SC 1.4 P15 L51 # 105  
Law, David Hewlett-Packard

Comment Type T Comment Status X

I'm not too sure about '.. over one lane on single-mode fibre ..'. For multiple 'physical' lane optical links we mentioned the fibres - for example 100GBASE-SR10 is '.. over ten lanes of multimode fibre ..', for multiple 'wavelength' lane optical links we mentioned wavelengths - for example 100GBASE-ER4 is '.. over four WDM lanes on single-mode fibre ..'. Following on this logic maybe 40GBASE-FR should be '.. over one wavelength ..'.

SuggestedRemedy

Suggest that '.. over one lane on sigle-mode fibre ..' should be changed to read '.. over a one wavelength on sigle-mode fibre ..'.

Proposed Response Response Status O

Cl 01 SC 1.4.3 P15 L44 # 14  
Booth, Bradley AppliedMicro

Comment Type ER Comment Status X

I'm adverse to changing the definition for 10BASE-F to include the statement of multimode. While it is technically correct, there is no statement about "multimode" to be found in Clause 15. There is not likely to be confusion between the types of fiber used for 10BASE-F and 40GBASE-FR.

SuggestedRemedy

Delete 1.4.3.

Proposed Response Response Status O

Cl 01 SC 1.4.x P15 L49 # 79  
Thompson, Geoff GraCaSI

Comment Type TR Comment Status X

The definition:  
1.4.x 40GBASE-FR: IEEE 802.3 Physical Layer specification for 40 Gb/s using 40GBASE-R encoding over one lane on single-mode fiber, with reach up to at least 2 km. (See IEEE 802.3, Clause 89.)  
is needlessly obscure. Replace with something more straightforward and descriptive

SuggestedRemedy

I suggest the following definition:  
1.4.x 40GBASE-FR: IEEE 802.3 Physical Layer specification for 40 Gb/s using 40GBASE-R encoding over a single wavelength of one single-mode fiber for each direction, with reach up to at least 2 km. (See IEEE 802.3, Clause 89.)

Proposed Response Response Status O

Cl 01 SC 1.5 P16 L5 # 83  
Frazier, Howard Broadcom Corporation

Comment Type E Comment Status X

DGD should appear in the list of abbreviations.

SuggestedRemedy

Add  
DGD differential group delay

Proposed Response Response Status O

Cl 30 SC 30.5.1.1.2 P17 L11 # 90  
 Ganga, Ilango Intel  
 Comment Type E Comment Status X  
 Change to ..."as specified in Clause 89"  
 SuggestedRemedy  
 As per comment  
 Proposed Response Response Status O

Cl 45 SC 45.2.1.11a P21 L41 # 101  
 Law, David Hewlett-Packard  
 Comment Type E Comment Status X  
 Typo.  
 SuggestedRemedy  
 The R/W column should read 'RO'.  
 Proposed Response Response Status O

Cl 45 SC 45.2.1.11a P21 L41 # 24  
 Marris, Arthur Cadence  
 Comment Type E Comment Status X  
 Missing RO  
 SuggestedRemedy  
 Add RO to bit 1.13.4 in Table 45-12a  
 Proposed Response Response Status O

Cl 45 SC 45.2.1.11a P21 L41 # 94  
 Ganga, Ilango Intel  
 Comment Type T Comment Status X  
 Show bit 1.3.4 FR ability bit as Read Only  
 SuggestedRemedy  
 FR ability bit: Add RO to column R/W  
 Proposed Response Response Status O

Cl 45 SC 45.2.1.11a P21 L41 # 20  
 Trowbridge, Steve Alcatel-Lucent  
 Comment Type T Comment Status X  
 The 40GBASE-FR ability bit is read-only  
 SuggestedRemedy  
 Insert "RO" in the "R/W" column of the 40GBASE-FR ability row of Table 45-12a  
 Proposed Response Response Status O

Cl 45 SC 45.2.1.11a P21 L42 # 27  
 Nowell, Mark Cisco Systems  
 Comment Type E Comment Status X  
 40GBASE-FR ability does not have a register bit "RO" designation in Table 45-12a  
 SuggestedRemedy  
 Add "RO" to the 40GBASE-FR row  
 Proposed Response Response Status O

Cl 45 SC 45.2.1.7.4 P20 L18 # 47  
 Dawe, Piers IPtronics  
 Comment Type E Comment Status X  
 We now have more than 10 lines in the format "The description of the transmit fault function for the xxx PMD is given in n.m.o".  
 SuggestedRemedy  
 Consider resetting the references as a table.  
 Similarly for 45.2.1.7.5 and 45.2.1.8.  
 Proposed Response Response Status O

Cl 45 SC 45.2.1.8 P20 L45 # 89  
Ganga, Ilango Intel

Comment Type E Comment Status X

Enclose "as modified by IEEE Std 802.3ba-2010" in parenthesis as shown below:

Change 45.2.1.8 (as modified by IEEE Std 802.3ba-2010) as follows...

Make similar changes to other Editing instructions as appropriate

SuggestedRemedy

As per comment

Proposed Response Response Status O

Cl 80 SC 80.1.2 P23 L12 # 102  
Law, David Hewlett-Packard

Comment Type E Comment Status X

There were minor editorial changes made to the objectives text during the preparation for publication of IEEE Std 802.3ba-2010, for example '.. of IEEE 802.3 standard.' was changed to read '.. of IEEE Std 802.3.'.

SuggestedRemedy

Please update the base text that is being modified here to match the published text in IEEE Std 802.3ba-2010.

Proposed Response Response Status O

Cl 80 SC 80.1.2 P23 L12 # 6  
Anslow, Peter Ciena

Comment Type E Comment Status X

The exact wording of the text in 80.1.2 is different in the published version of IEEE Std 802.3ba compared to D 3.2.

e.g.

in item c) "frame size of IEEE 802.3 standard" has changed to "frame size of IEEE Std 802.3"

in item g) "Provide Physical Layer specifications which support 40 Gb/s operation over up to:" has changed to "Provide Physical Layer specifications that support 40 Gb/s operation over up to the following:"  
etc.

SuggestedRemedy

Change the base text of 80.1.2 to be the same as the published version of IEEE Std 802.3ba-2010.

Do the same for any other text in 802.3bg that is modifying text from IEEE Std 802.3ba-2010

Proposed Response Response Status O

Cl 80 SC 80.1.2 P23 L19 # 91  
Ganga, Ilango Intel

Comment Type ER Comment Status X

Update the base text for objectives as per the latest IEEE Std 802.3ba-2010 document.

Alternatively just insert the new objective to item 1). No need to repeat the entire list in this amendment.

Also delete the informative instruction at line 3.

SuggestedRemedy

As per comment.

Proposed Response Response Status O

Cl 80 SC 80.1.2 P23 L19 # 25  
 Marris, Arthur Cadence  
 Comment Type T Comment Status X  
 The 2km reach objective for SMF appears redundant coming after the 10km reach objective.  
 SuggestedRemedy  
 Consider qualifying the 2km reach objective for example as follows:  
 "at least 2 km on single-mode fiber (SMF) using 1500nm optics"  
 Proposed Response Response Status O

Cl 80 SC 80.1.2 P23 L19 # 68  
 Diab, Wael Broadcom  
 Comment Type T Comment Status X  
 I understand the motivation to change the objectives in Clause 80, however these were project objectives not Clause objectives and should either be preserved that way or removed  
 SuggestedRemedy  
 Please either retain the 802.3ba project objectives as is or simply remove all objectives as the clause no longer just supports one original project  
 Proposed Response Response Status O

Cl 80 SC 80.1.2 P23 L19 # 80  
 Thompson, Geoff GraCaSI  
 Comment Type TR Comment Status X  
 The text:  
 2) at least 2 km on single-mode fiber (SMF)  
 is not sufficiently descriptive.  
 Whether fiber plant is duplex on a single fiber or dual simplex on two fibers is not a given in the world. It needs to be specified.  
 Parallel change also needed on page 24 line 16.  
 SuggestedRemedy  
 Change to:  
 2) at least 2 km on dual simplex single-mode fiber (SMF)  
 (I suggest that other definitions in this same section that are outside the scope of this ballot also be corrected as a service to humanity.)  
 Proposed Response Response Status O

Cl 80 SC 80.1.3 P23 L34 # 81  
 Thompson, Geoff GraCaSI  
 Comment Type TR Comment Status X  
 The text:  
 "g) The MDI as specified in Clause 89 for 40GBASE-FR uses a single lane data path." is correct and not sufficiently precise.  
 SuggestedRemedy  
 Change to:  
 "g) The MDI as specified in Clause 89 for 40GBASE-FR uses a single lane data path in each direction."  
 Proposed Response Response Status O

Cl 80 SC 80.1.4 P24 L1 # 49  
 Dawe, Piers IPtronics  
 Comment Type E Comment Status X  
 The entries in this table are very repetitive and the table may grow further in future.  
 SuggestedRemedy  
 Consider setting it out as a multi-column table, with columns  
 Name Data rate (Gb/s) Encoding Number of lanes Medium Minimum reach Clause  
 Proposed Response Response Status O

Cl 80 SC 80.1.4 P24 L1 # 48  
 Dawe, Piers IPtronics  
 Comment Type E Comment Status X  
 I think that the ordering within a speed (group) is from short to long. Ordering by distance would be more use in Clause 80 than ordering by MDIO code.  
 SuggestedRemedy  
 Move the 40GBASE-FR entry up one. Similarly for the rows in Table 80-2, and move the 40GBASE-FR PMD column to between CPPI and 40GBASE-LR4 PMD. For 80.4, change "Table 80-3 below 40GBASE-LR4 PMD" to "Table 80-3 above 40GBASE-LR4 PMD".  
 Proposed Response Response Status O

**Cl 80 SC 80.1.4 P24 L2 # 99**  
 Ganga, Ilango Intel  
**Comment Type E Comment Status X**  
 No need to repeat entire Table 80-1 in this amendment. Just have editing instruction to insert the 40GBASE-FR row to the table (similar to Table 80-3 on page 27)  
*SuggestedRemedy*  
 As per comment  
*Proposed Response Response Status O*

**Cl 80 SC 80.3.2 P25 L47 # 92**  
 Ganga, Ilango Intel  
**Comment Type ER Comment Status X**  
 Change the editing instruction as follows:  
 "Change Figure 80-2 to add Note 2 as follows"  
 No need to provide a reason in the Editing instruction.  
 Also underline Note 2 in Figure 80-2 on page 26 to highlight the changes.  
*SuggestedRemedy*  
 As per comment  
*Proposed Response Response Status O*

**Cl 80 SC 80.3.2 P26 L48 # 15**  
 Booth, Bradley AppliedMicro  
**Comment Type ER Comment Status X**  
 In Figure 80-2, the note about the primitives could be confusing. The lowest PMA for 40GBASE-FR will be a 4:1; therefore, the other primitives do not exist.  
*SuggestedRemedy*  
 Change to read:  
 NOTE 2—DOES NOT EXIST FOR 40GBASE-FR PMD  
*Proposed Response Response Status O*

**Cl 80 SC 80.5 P27 L20 # 8**  
 Anslow, Peter Ciena  
**Comment Type T Comment Status X**  
 Figures 80-4 and 80-5 in subclause 80.5 both show the lowest PMA in the 40G stack as a PMA (4:4), but with 40GBASE-FR this could be a PMA (4:1)  
*SuggestedRemedy*  
 Include Figures 80-4 and 80-5 in the draft and change them to have the lowest 40G PMA as (4:m) with: m = 1 or 4  
*Proposed Response Response Status O*

**Cl 80 SC 80.5 P27 L34 # 50**  
 Dawe, Piers IPtronics  
**Comment Type E Comment Status X**  
 The notes (column) are getting increasingly unwieldy.  
*SuggestedRemedy*  
 Use commas, e.g. "See 83.5.3.3, 84.5, 85.5, 86.3.2, 87.3.2, 88.3.2 or 89.3.2"  
 Make columns 1 and 2 narrower, column 5 wider.  
*Proposed Response Response Status O*

**Cl 80 SC 80.5 P28 L29 # 17**  
 Firoozmand, Farzin Semtech  
**Comment Type E Comment Status X**  
 Fig 80-4 and 80-5 shows PMA 4:4 only. With the addition of 40GBaseFR they need to be modified  
*SuggestedRemedy*  
 Add:  
 In Figures 80-4 and 80-5 in 802.3ba, change the PMA blocks between SP1 and SP2 from 4:4 to 4:n  
 Also change n=4 or 10 to n=1,4 or 10  
*Proposed Response Response Status W*

[Editor's note: Subclause changed from 5 to 80.5]

Cl 83 SC P29 L4 # 100  
 Ganga, Ilango Intel  
 Comment Type E Comment Status X  
 Remove this informative note in editing instruction.  
 SuggestedRemedy  
 As per comment  
 Proposed Response Response Status O

Cl 83 SC 83.7 P29 L # 93  
 Ganga, Ilango Intel  
 Comment Type ER Comment Status X  
 Add the changes to PICS item for LANES-UPSTREAM to include option for 1 lane. (similar to downstream)  
 SuggestedRemedy  
 As per comment  
 Proposed Response Response Status O

Cl 89 SC 89.1 P L # 67  
 Diab, Wael Broadcom  
 Comment Type T Comment Status X  
 The overview text with the statement that the PMD can be compliant to the ITU PMD is confusing.  
 SuggestedRemedy  
 Please split out the text regarding the ITU PMD into a new section/sub section called "Relationship to ITU-T G.693". Please also avoid statements that the PMD should be compliant for that application. Use terminology such as "maybe compatible with"  
 Proposed Response Response Status O

Cl 89 SC 89.1 P31 L10 # 53  
 Dawe, Piers IPtronics  
 Comment Type T Comment Status X  
 Draft says "different from the methodology used in the other 40GBASE-R optical PMDs." But it's worse than that, it's different from all other 802.3 optical PMDs from at least the last 12 years.  
 SuggestedRemedy  
 Use a TDP/stressed sensitivity spec method, or change "the other 40GBASE-R optical PMDs" to "other BASE-R optical PMDs". Consider making that "other 802.3 optical PMDs".  
 Proposed Response Response Status O

Cl 89 SC 89.1 P31 L10 # 33  
 Ghiasi, Ali Broadcom  
 Comment Type TR Comment Status X  
 A more deatial disclaimer need to be added inclduing the fact VSR2000-3R2 does not have the same level of interoperability or BER objective  
 SuggestedRemedy  
 The specifications in this clause therefore use a similar methodology to that used in ITU-T G.693 [Bx1] and not recomended for reuse as it does not provide the same level of interoperability or BER other 40GBASE-R PMDs provide.  
 Proposed Response Response Status W

[Editor's note: Subclause changed from 1 to 89.1 and Page changed from 30 to 31]

Cl 89 SC 89.1 P31 L9 # 28  
 Nowell, Mark Cisco Systems  
 Comment Type E Comment Status X  
 The description of the use of alternative methodologies used in this clause is fairly broad. It is only the optical link specifications that follow the ITU methodology and not the whole of the clause 89 which closely follows the specifications methodology from the 802.3ba clauses.  
 SuggestedRemedy  
 Add the words "optical link" or equivalent into the sentence. "The optical link specifications in this clause therefore use a similar methodology ...."  
 Proposed Response Response Status O

Cl 89 SC 89.1 P31 L9 # 85  
Frazier, Howard Broadcom Corporation

Comment Type TR Comment Status X

The last sentence of this paragraph does not go far enough in highlighting the difference between this PMD specification and the ones that preceded it in IEEE Std 802.3. There may be good and valid reasons for using a different specification and test methodology for this PMD, but I am concerned about setting a precedent that will lead to a regression of our methodology.

SuggestedRemedy

Change the last sentence of the first paragraph of 89.1 to read:  
The 40GBASE-FR PMD is defined using a specification and test methodology that is similar to that used in ITU-T G.693 [Bx1], which is different from the specification and test methodologies recently used for other optical PMDs in IEEE Std 802.3. For example, the transmit characteristics for 40GBASE-FR do not include optical modulation amplitude or transmitter and dispersion penalty parameters, and the receive characteristics for 40GBASE-FR do not include stressed receiver sensitivity parameters.

Proposed Response Response Status O

Cl 89 SC 89.10 P44 L25 # 42  
Dudek, Mike QLogic

Comment Type TR Comment Status X

Table 89-13 is the specification for the channel. In order to close the budget the DGD of the channel should be limited. The footnote to the table refers to the amount of DGD that the system must tolerate it does not limit the DGD of the channel.

SuggestedRemedy

In the footnote replace "DGD\_max is the maximum differential group delay that the system must tolerate" with "DGD\_max is the maximum differential group delay that the channel is allowed to have."

Proposed Response Response Status O

Cl 89 SC 89.10.1 P44 L37 # 2  
Kolesar, Paul CommScope

Comment Type E Comment Status X

The suffix "A" of fiber type B6\_A should not be capitalized. Note that this same minor error appears a few times in clauses 87 and 88 (802.3ba).

SuggestedRemedy

Change B6\_A to B6\_a.

Proposed Response Response Status O

Cl 89 SC 89.10.1 P44 L38 # 104  
Law, David Hewlett-Packard

Comment Type T Comment Status X

Isn't it 'Type B6\_a' rather than 'Type B6\_A'?

SuggestedRemedy

Could you please check IEC 60793-2-50:2008 and correct if required.

Proposed Response Response Status O

Cl 89 SC 89.11.3 P47 L11 # 22  
Trowbridge, Steve Alcatel-Lucent

Comment Type T Comment Status X

There is no specified physical instantiation of the PMD service interface for 40GBASE-FR: only the logical aspects (bit order) can be inferred from this standard. Therefore TP1 and TP4 are described only logically with no electrical characteristics (amplitude, jitter generation or tolerance) specified for the (very short) 40G serial electrical interface.

SuggestedRemedy

Consider whether there is value in including XLTP1 or XLTP4 in the PICs tables, as anything which might be measured at these reference point is according to specifications which are outside of the scope of this standard.

Proposed Response Response Status O



CI 89 SC 89.11.4.4 P50 L13 # 72  
 D'Ambrosia, John Force10 Networks  
 Comment Type ER Comment Status X  
 Item XLOM3 - value / comment field focuses on test methodology, but does not point to the table that has the values that need to be met.  
 SuggestedRemedy  
 Add reference in value field to Table 89-6 AND 89-7.  
 Proposed Response Response Status O

CI 89 SC 89.11.4.4 P50 L14 # 73  
 D'Ambrosia, John Force10 Networks  
 Comment Type ER Comment Status X  
 XLOM4 subclause reference is not specific enough.  
 SuggestedRemedy  
 change subclause reference to 89.7.5.3  
 Proposed Response Response Status O

CI 89 SC 89.11.4.4 P50 L15 # 74  
 D'Ambrosia, John Force10 Networks  
 Comment Type ER Comment Status X  
 Item XLOM5 - value / comment field focuses on test methodology, but does not point to the table that has the values that need to be met.  
 SuggestedRemedy  
 Proposed Response Response Status O

CI 89 SC 89.11.4.4 P50 L8 # 52  
 Dawe, Piers IPtronics  
 Comment Type E Comment Status X  
 PICS XLOM2 says "Per TIA-455-127-A or IEC 61280-1-3 under modulated conditions". Other PICS, for tests that also need modulated conditions, don't say "under modulated conditions", so picking out this one is misleading. 89.7.3 says just "per TIA/EIA-455-127-A or IEC 61280-1-3 using the test pattern".  
 SuggestedRemedy  
 Delete "under modulated conditions".  
 Proposed Response Response Status O

CI 89 SC 89.11.4.4 P50 L8 # 76  
 D'Ambrosia, John Force10 Networks  
 Comment Type ER Comment Status X  
 Item XLOM2 - value / comment field focuses on test methodology, but does not point to the table that has the values that need to be met.  
 SuggestedRemedy  
 Add reference in value field to Table 89-6.  
 Proposed Response Response Status W

[Editor's note: Line changed from 88 to 8]

CI 89 SC 89.2 P32 L16 # 87  
 Ganga, Ilango Intel  
 Comment Type E Comment Status X  
 In Figure 89-1 change shading for the PMD to match the style of similar PMD figures in based document (See Fig 87-1 in IEEE Std 802.3ba-2010)  
 SuggestedRemedy  
 As per comment  
 Proposed Response Response Status O

Cl 89 SC 89.2 P32 L48 # 71  
Diab, Wael Broadcom

Comment Type T Comment Status X

The content of this note seems more appropriate under Table 89-4. Furthermore, a note technically is not part of the specification, I am not sure if this was the intent of the group

SuggestedRemedy

- Suggest either
(a) Moving the note to be under Table 89-4
(b) Changing the note to be a footnote to Table 89-4

If more explanatory text is needed under the diagram, change the note to regular text.

Proposed Response Response Status O

Cl 89 SC 89.3.2 P33 L17 # 77  
D'Ambrosia, John Force10 Networks

Comment Type TR Comment Status X

Skew limit at SP2 is limited to 43ns and variation at same point is 400 ps. It is not clear why this is not a normative limit. If it isnt normative, then statement should be modified.

SuggestedRemedy

- Depends on the nature of the specification.
If normative - change "limited to" to "shall be less than"
If informative - change "limited to" to "should be less than"

Proposed Response Response Status O

Cl 89 SC 89.3.2 P33 L18 # 41  
Dudek, Mike QLogic

Comment Type TR Comment Status X

The PMD service interface is a serial interface and therefore skew variation is not appropriate.

SuggestedRemedy

On page 33 line 18 replace "and the Skew Variation at SP2 is limited to 400ps" with ". Since the signal signal at the PMD service interface represents a serial bit stream, there is no Skew Variation at this point."

On Page 33 line 27 replace "and the Skew Variation at SP5 shall be less than 3.6ns" with ". Since the signal signal at the PMD service interface represents a serial bit stream, there is no Skew Variation at this point."

Also in section 89.7.2. page 38 line 51 Replace "is a serial bit stream at the MDI, there is no Skew Variation at skew points SP3 and SP4" with "is a serial bit stream at the PMD service interface and MDI, there is no Skew Variation at skew points SP2, SP3 SP4 and SP5"

Proposed Response Response Status O

Cl 89 SC 89.5.1 P34 L24 # 7  
Anslow, Peter Ciena

Comment Type E Comment Status X

The exact wording of the text is different in the published version of IEEE Std 802.3ba compared to D 3.2. Since clause 89 is intended to follow clause 87 as far as possible, there is a minor change that should be made to clause 89 to bring it closer to the published version of clause 87.

SuggestedRemedy

On page 34, line 24 change "implemeters" to "implementors"

Proposed Response Response Status O

Cl 89 SC 89.5.1 P34 L33 # 34  
Ghiasi, Ali Broadcom

Comment Type TR Comment Status X

PMD service interface TP1 and TP4 are not applicable as they are not currently defined

*SuggestedRemedy*

Remove TP1 and TP4  
Add XLAUI interface to the PMA

Proposed Response Response Status W

[Editor's note: Subclause changed from 5.1 to 89.5.1]

Cl 89 SC 89.5.1 P34 L43 # 16  
Booth, Bradley AppliedMicro

Comment Type ER Comment Status X

In Figure 89-2, the note is a bit confusing. I'm sure the note has been used previously, but to state that the retimer function is part of the PMA and then to state that the specification of it is beyond the scope of this standard just doesn't read correct. IMHO, the statement should be related to the implementation of the retimer function.

*SuggestedRemedy*

Change note to read:  
NOTE—Retimer function is left up to the implementer.

Proposed Response Response Status O

Cl 89 SC 89.5.4 P35 L20 # 63  
Carroll, Martin Verizon

Comment Type E Comment Status X

The statement beginning on line 20, "The PMD receiver is not required to verify whether a compliant 40GBASE-R signal is being received...", seems to be in conflict with the Table 89-4—SIGNAL\_DETECT value definition for an "OK" value. According to the Table, an OK value is achieved based on two Receive Conditions. The second Receive Condition requires a "(compliant 40GBASE-R signal input)"; therefore, shouldn't the PMD receiver be required to verify that a compliant 40GBASE-R signal is being received in order to comply with the second condition?

*SuggestedRemedy*

Remove the word "not" from the statement beginning on line 20 resulting in the following text, "The PMD receiver is required to verify whether a compliant 40GBASE-R signal is being received."

Proposed Response Response Status O

Cl 89 SC 89.5.4 P35 L29 # 84  
Frazier, Howard Broadcom Corporation

Comment Type T Comment Status X

There is quite a broad range (24 dB) of receive conditions over which SIGNAL\_DETECT has an unspecified value. The -30 dBm threshold is there for historical reasons, going back at least as far as FDDI, when the receiver sensitivity was on the order of a few dB higher than the signal detect "must deassert" threshold. Perhaps it is time to bring the threshold up to a more relevant level, as I doubt that a 40GBASE-FR PMD is going to produce anything intelligible out of its receiver with an input signal of less than -10 dbm.

*SuggestedRemedy*

Change the SIGNAL\_DETECT (FAIL) threshold to -20 dBm, from -30 dBm.

Proposed Response Response Status O

Cl 89 SC 89.5.6 P36 L6 # 106  
Law, David Hewlett-Packard

Comment Type T Comment Status X

Shouldn't we have text that maps this function to the MDIO bits as is done for subclause 89.5.7 through 89.5.9 below. Also suggest a note similar to the one provided in 52.4.7 in relation to not using the Lane 0 control bit for serial PMDs also be included.

*SuggestedRemedy*

Suggest that the following be added:

If the MDIO interface is implemented, then this function shall map to the PMD\_global\_transmit\_disable bit as specified in 45.2.1.8.5.

NOTE—PMD Transmit Disable 0 is not used for serial PMDs.

Proposed Response Response Status O

Cl 89 SC 89.5.7 P36 L9 # 39  
Dudek, Mike QLogic

Comment Type T Comment Status X

This is a serial PMD. There is only one Tx path and one Rx path

*SuggestedRemedy*

replace "on any of the transmit or receive paths" with "on the transmit or receive path"

Proposed Response Response Status O

Cl 89 SC 89.5.7 P36 L9 # 103  
Law, David Hewlett-Packard

Comment Type E Comment Status X

Since there is only one transmit and receive path suggest that '.. a local fault on any of the transmit or receive paths..' should be changed to read '.. a local fault on either the transmit or receive path ..'.

SuggestedRemedy

See comment.

Proposed Response Response Status O

Cl 89 SC 89.6 P36 L28 # 51  
Dawe, Piers IPtronics

Comment Type E Comment Status X

This subclause uses "operating range" once, "required operating range" twice, "operating range requirement" once and "40GBASE-FR operating range" once.

SuggestedRemedy

Change the first "operating range" to "required operating range", and "40GBASE-FR operating range" to "40GBASE-FR required operating range".

Proposed Response Response Status O

Cl 89 SC 89.6 P36 L28 # 29  
Nowell, Mark Cisco Systems

Comment Type E Comment Status X

Where are SMF fiber types B1.1, B1.3 and B6\_A defined?

SuggestedRemedy

Add a reference.

Proposed Response Response Status O

Cl 89 SC 89.6 P36 L28 # 26  
Marris, Arthur Cadence

Comment Type T Comment Status X

What are type B1.1, B1.3 or B6\_A single-mode fibers?

SuggestedRemedy

Consider adding a reference here (should it be to IEC 60793-2-50?) particularly as the current text can be read as saying these types of fiber are defined in Table 89-13.

Proposed Response Response Status O

Cl 89 SC 89.6 P36 L29 # 1  
Kolesar, Paul CommScope

Comment Type E Comment Status X

The suffix "A" of fiber type B6\_A should not be capitalized.

SuggestedRemedy

Change B6\_A to B6\_a.

Proposed Response Response Status O

Cl 89 SC 89.6.1 P37 L14 # 61  
Dawe, Piers IPtronics

Comment Type TR Comment Status X

I do not believe that this draft is "optically compatible with existing carrier 40Gb/s client interfaces" (from the PAR and objectives).  
An implementer could make a very slow transmitter with excessive transmitter penalty as long as he got the dispersion penalty OK, and call it compliant. I don't believe that existing VSR2000-3R2 transmitters are that bad, and I don't believe that existing VSR2000-3R2 receivers could receive this worst allowed signal with confidence, and I doubt that folks want to redesign their receivers.  
A motion in Geneva doesn't fix this.  
Notice that TDP uses the same with/without dispersion measurement that this draft uses already. After the sensitivity to the reference transmitter has been established as a one-off, using a TDP spec will be a cost-effective way to plug the gap and avoid interoperability problems.

SuggestedRemedy

As TDP uses the same tests as DP, after the reference transmitter/sensitivity has been established as a one-off, using a TDP spec will be a cost-effective way to plug the gap and avoid interoperability problems. Suggested TDP limit 3.3 dB (the largest limit in 802.3ae less the polarisation penalty here).

Proposed Response Response Status O

Cl 89 SC 89.6.1 P37 L14 # 62  
Dawe, Piers IPtronics

Comment Type TR Comment Status X

The dispersion penalty limit of 2 dB is the same as VSR2000-3R2's path penalty and this draft's "allocation for penalties". Path penalty includes at least some of the polarisation dispersion penalty. So it appears that this draft overlooks the dispersion penalty, which is just over 0.5 dB for the 7.5 ps DGD\_max given in Table 89-13.

SuggestedRemedy

As the penalties are too high in this draft, use a TDP limit and eliminate the separate dispersion penalty, or reduce the dispersion penalty limit by 0.5 dB to 1.5 dB.

Proposed Response Response Status O

Cl 89 SC 89.6.1 P37 L25 # 30  
Nowell, Mark Cisco Systems

Comment Type T Comment Status X

Do the transmitter eye mask definition coordinates (X1,X2,X3,Y1,Y2,Y3) reference a diagram to indicate the correct usage?

SuggestedRemedy

Add a reference to an existing diagram or add a diagram.

Proposed Response Response Status O

Cl 89 SC 89.6.2 P37 L36 # 86  
Frazier, Howard Broadcom Corporation

Comment Type TR Comment Status X

The receive characteristics in Table 89-7 include two center wavelength ranges. Given that the transmitter is constrained to a center wavelength range of 1530 to 1565 nm, the addition of the 1290 to 1330 nm wavelength range at the receiver might add unnecessary cost. It doesn't make sense to force the receiver to accept a range of center wavelengths that are so far removed from the transmitter's.

SuggestedRemedy

Remove the 1290 to 1330 nm wavelength range from Table 89-7.

Proposed Response Response Status O

Cl 89 SC 89.6.2 P37 L47 # 57  
Dawe, Piers IPtronics

Comment Type T Comment Status X

I see there is a receiver 3 dB electrical upper cutoff frequency spec in this draft although I do not see any equivalent in VSR2000-3R2.

SuggestedRemedy

If you can add this you can add the much more important TDP spec (which is based on the measurements (or predictions) with/without dispersion that must already be done to satisfy the dispersion penalty spec).

Proposed Response Response Status O

**Cl 89**    **SC 89.6.2**                      **P37**                      **L51**                      # **40**  
 Dudek, Mike                                      QLogic

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

It would be good to point out at the point of use that "Receiver sensitivity (average power) (max) in table 89-7 is not the same as has been used in other clauses in IEEE 802.3

**SuggestedRemedy**  
 Add at the end of footnote b. This is a different definition of receiver sensitivity than that used in other IEEE 802.3 clauses (eg that in Clause 38). See 89.6.4 for a comparison.

Add new clause 89.6.4 Titled "Comparison of link power budget methodology" that will be included in dudek\_01\_0910.

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

**Cl 89**    **SC 89.6.3**                      **P38**                      **L19**                      # **56**  
 Dawe, Piers                                      IPtronics

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

Draft has a row "Allocation for penalties" which at present is just one penalty (dispersion penalty), which in spite of the footnote, is a requirement, and it could be given a more accurate title. This row should contain either all the penalties or at least all the path penalties.

I don't see any calculations, except in this table 4+2=6.

**SuggestedRemedy**  
 Use a proper TDP specification, or rename to "Path penalty" and change note c to "Path penalty is the combined penalty caused by chromatic dispersion and polarization mode dispersion."

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

**Cl 89**    **SC 89.6.3**                      **P37**                      **L36**                      # **35**  
 Ghiasi, Ali                                      Broadcom

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

With the transmitter center wavelength at 1550 nm compatible with VSR3, there is not need to require FR receiver be dual wavelength. If the reason to add 1310 nm band for some future 1310 nm targeted for lower power and cost but we already declared at the beginning SONET VSR methodology is not recommended for reuse for not having same level of interoperability as IEEE specifications.

**SuggestedRemedy**  
 Remove the 1310 nm window

**Proposed Response**                      **Response Status**    **W**

**Cl 89**    **SC 89.7.10**                      **P42**                      **L20**                      # **19**  
 Trowbridge, Steve                              Alcatel-Lucent

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

It is called "Sinusoidal jitter" in all places but one

**SuggestedRemedy**  
 Change "sine jitter" to "sinusoidal jitter"

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

[Editor's note: Subclause changed from 6.3 to 89.6.3]

**Cl 89**    **SC 89.6.3**                      **P37**                      **L46**                      # **36**  
 Ghiasi, Ali                                      Broadcom

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

Receiver jitter tolerance test method missing

**SuggestedRemedy**  
 Add receiver jitter tolerance

**Proposed Response**                      **Response Status**    **W**

[Editor's note: Subclause changed from 6.3 to 89.6.3]

**Cl 89**    **SC 89.7.10**                      **P42**                      **L20**                      # **82**  
 Frazier, Howard                              Broadcom Corporation

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

In footnote a to Table 89-12, "sine" should be "sinusoidal".

**SuggestedRemedy**  
 per comment.

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

Cl 89 SC 89.7.10 P42 L4 # 37  
Ghiasi, Ali Broadcom

Comment Type TR Comment Status X

The receiver jitter tolerance here is unstress which is different than 802.3 and note should be added to clarify

SuggestedRemedy

Add note receiver jitter tolerance is unstress

Proposed Response Response Status W

[Editor's note: Subclause changed from 7.10 to 89.7.10]

Cl 89 SC 89.7.10 P42 L4 # 31  
Lewis, David JDSU

Comment Type TR Comment Status X

Receiver jitter tolerance is defined for a BER of 1E-10 whereas one of the objectives for 40 Gigabit Ethernet is to support a BER better than or equal to 1E-12 (80.1.2 d). Since receiver sensitivity (sec 89.7.9) is defined at 1E-12, with no added jitter, it makes sense to define jitter tolerance at that level and not the higher 1E-10 level. I think the magnitude of jitter tolerance (1dB max) and the amount of added jitter (0.18 UI increasing below 16 MHz) can stay the same if we assume linear behavior of sensitivity from 1E-10 to 1E-12 BER.

SuggestedRemedy

Change the 1st sentence of 89.7.10 to ".....maintain a BER of 10-12.....".

Proposed Response Response Status O

Cl 89 SC 89.7.10 P42 L4 # 59  
Dawe, Piers IPtronics

Comment Type TR Comment Status X

Draft says "when the sinusoidal jitter ... is applied to the signal" but it doesn't say what "the signal" is. So we have to assume it's any signal that the receiver might receive in service: best or worst transmitter, most or least dispersion, possibly with polarisation dispersion. But maybe this is not what is meant.

SuggestedRemedy

State explicitly what "the signal" is and give enough information so that an implementer can generate it reproducibly enough for a jitter tolerance measurement. Alternatively, use a stressed sensitivity spec and get rid of the jitter tolerance spec.

Proposed Response Response Status O

Cl 89 SC 89.7.2 P39 L1 # 13  
Booth, Bradley AppliedMicro

Comment Type E Comment Status X

Table 89-10 is inserted into the middle of the paragraph of 89.7.2.

SuggestedRemedy

Change table properties so it doesn't split the paragraph.

Proposed Response Response Status O

Cl 89 SC 89.7.3 P39 L31 # 18  
Trowbridge, Steve Alcatel-Lucent

Comment Type E Comment Status X

Table 89-10 does not define test patterns: it indicate which pattern to use to measure a given parameter

SuggestedRemedy

Change:

"using the test pattern defined in Table 89-10."

to:

"using the test pattern indicated in Table 89-10."

Make same correction to sub-clause 89.7.4 page 39 line 36

Make same correction to sub-clause 89.7.7 page 41 line 21

Proposed Response Response Status O

Cl 89 SC 89.7.5.2 P40 L28 # 58  
Dawe, Piers IPtronics

Comment Type T Comment Status X

A CRU passes jitter from its input (an analog signal) to its recovered clock, and possibly to recovered data. It doesn't pass jitter from the data to the clock.

SuggestedRemedy

Change "data" to "signal".

Proposed Response Response Status O

Cl 89 SC 89.7.5.3 P40 L34 # 21  
Trowbridge, Steve Alcatel-Lucent

Comment Type T Comment Status X

It is unclear from the text in (a), (b) and Figure 89-3 exactly what the configuration is for making the first measurements. If one simply omits the test fiber (without, for example, replacing it with a short fiber), the transmitter is not connected via the optical attenuator to the reference receiver and the measurement cannot be made. Presumably the intent for the setup is to either connect the output of the splitter via a short fiber to the input of the attenuator and to set the variable reflector to zero, or perhaps even to just connect the output of the transmitter via a short fiber directly to the optical attenuator (skipping the splitter and variable reflector since the reflection is not supposed to exist)

SuggestedRemedy

Clarify by improvements to the text of (a) and (b) and/or figure 89-3 what the setup is for the measurement taken in (c).

Proposed Response Response Status O

Cl 89 SC 89.7.9 P41 L43 # 54  
Dawe, Piers IPtronics

Comment Type T Comment Status X

This recipe for receiver testing "This shall be met with a transmitter with worst-case transmit eye, extinction ratio, transmitter reflectance and RIN20OMA." is vague, therefore likely to cause disagreement, and not to be applied thoroughly and consistently. There should be a clear recipe for a (part)-stressed sensitivity procedure, although we add words saying that people can use other methods if they want to. We made good progress on stressed eye generation in 802.3ba; we can leverage that. Motion 1 from the Geneva Task Force meeting in May 2010 "Move to adopt the ITU-T style of optical power budget specification as proposed in slide 4 of anslow\_03\_0510" is not binding, and in any case does not explicitly require unclear specs.

SuggestedRemedy

Say that the methods of 87.8.11 may be used with appropriate exceptions. If these are not suitable, write down a method that is suitable, with sufficient information that implementers in a broad market can reproducibly implement this test.

Proposed Response Response Status O

Cl 89 SC 89.7.9 P41 L46 # 55  
Dawe, Piers IPtronics

Comment Type T Comment Status X

As this appears to be a dispersion-limited link (not loss-limited), specifying the receiver without the dispersion penalty is missing the point.

SuggestedRemedy

Include the dispersion penalty in the receiver spec.

Proposed Response Response Status O

Cl 89 SC 89.9 P44 L17 # 38  
Ghiasi, Ali Broadcom

Comment Type TR Comment Status X

Definition and test method for dispersion is missing

SuggestedRemedy

Add definition and test method

Proposed Response Response Status W

[Editor's note: Subclause changed from 9 to 89.9 and Page changed from 4 to 44]

Cl 89 SC 89.9 P44 L19 # 32  
Ghiasi, Ali Broadcom

Comment Type TR Comment Status X

Test method for DGD is missing

SuggestedRemedy

Add test method

Proposed Response Response Status W

[Editor's note: Subclause changed from 9 to 89.9 and Page changed from 4 to 44]



Cl 99 SC P13 L1 # 88  
 Ganga, Ilango Intel  
 Comment Type E Comment Status X  
 Indicate Annex A (informative) in ToC  
 SuggestedRemedy  
 As per comment  
 Proposed Response Response Status O

Cl 99 SC P4 L34 # 23  
 Marris, Arthur Cadence  
 Comment Type E Comment Status X  
 IEEE Std 802.3ba-2010 has now been published  
 SuggestedRemedy  
 Change 201x to 2010 here and in the editing instructions elsewhere in the document  
 Proposed Response Response Status O

Cl 99 SC P2 L1 # 96  
 Ganga, Ilango Intel  
 Comment Type E Comment Status X  
 Page 2, line 1: In "IEEE Std 802.3-2008" change em dash to en dash  
 SuggestedRemedy  
 As per comment  
 Proposed Response Response Status O

Cl 99 SC P4 L35 # 97  
 Ganga, Ilango Intel  
 Comment Type E Comment Status X  
 Page 4, line 35: change "802.3ba-201x" to "802.3ba-2010". Make this change throughout the document  
 SuggestedRemedy  
 Search and replace 802.3ba-20xx (and 201x) to 802.3ba-2010 throughout the document.  
 Proposed Response Response Status O

Cl 99 SC P3 L19 # 5  
 Anslow, Peter Ciena  
 Comment Type E Comment Status X  
 In previous amendments the sentence "Each IEEE 802.3 project/amendment is identified with a suffix (e.g., IEEE Std 802.3ba-20XX)." uses its own designation as an example.  
 SuggestedRemedy  
 Change "(e.g., IEEE Std 802.3ba-20XX)" to "(e.g., IEEE Std 802.3bg-201x)"  
 Proposed Response Response Status O

Cl 99 SC P4 L42 # 95  
 Ganga, Ilango Intel  
 Comment Type E Comment Status X  
 Change 802.3ba-20xx to  
 SuggestedRemedy  
 Proposed Response Response Status W  
 [Editor's note: missing comment type set to E]

CI 99 SC P6 L10 # 98  
 Ganga, Ilango Intel  
 Comment Type E Comment Status X  
 Fix the URL. It points to invalid page.  
 Change:  
<http://standards.ieee.org/reading/ieee.interp/index.html>  
 to:  
<http://standards.ieee.org/reading/ieee/interp/index.html>  
 SuggestedRemedy  
 As per comment  
 Proposed Response Response Status O

CI 99 SC P9 L47 # 3  
 Takahashi, Hidenori KDDI R&D Laboratorie  
 Comment Type E Comment Status X  
 Even though the symbol is "micro", the explanation is shown as "Lower case omicron" in the table of "Special symbols and operators".  
 SuggestedRemedy  
 Change the explanation from "Lower case omicron" to "Micro" same as 802.3ba-2010.  
 Proposed Response Response Status O

CI 99 SC 99 P1 L29 # 11  
 Booth, Bradley AppliedMicro  
 Comment Type E Comment Status X  
 This isn't just an amendment to IEEE Std 802.3-2008 as it also amends IEEE Std 802.3ba-2010 with the changes to Clauses 80 and 83.  
 SuggestedRemedy  
 Change to read:  
 This draft is an amendment of IEEE Std 802.3-2008 as amended by IEEE Std 802.3ba-2010.  
 Proposed Response Response Status O

CI 99 SC 99 P3 L19 # 10  
 Booth, Bradley AppliedMicro  
 Comment Type E Comment Status X  
 Reference to 802.3ba is incorrect.  
 SuggestedRemedy  
 Change first reference on page 3, line 19 to be:  
 IEEE Std 802.3ba(tm)-2010  
 Change subsequent references to be:  
 IEEE Std 802.3ba-2010  
 Proposed Response Response Status O

CI 99 SC 99 P3 L36 # 43  
 Dawe, Piers IPtronics  
 Comment Type E Comment Status X  
 Comprises is like contains: the bigger thing comprises its constituents, not the other way round. See <http://www.oxforddictionaries.com/definition/comprise>  
 SuggestedRemedy  
 Change "IEEE Std 802.3 is comprised of the following documents" to "IEEE Std 802.3 comprises the following documents". Or consists of, or is composed of, or is made up of, or contains.  
 Proposed Response Response Status O

CI 99 SC 99 P4 L6 # 44  
 Dawe, Piers IPtronics  
 Comment Type E Comment Status X  
 There's only one Physical Layer.  
 SuggestedRemedy  
 Change "Physical Layers" to "Physical Layer types". Also at lines 16, 38 and 44.  
 Proposed Response Response Status O

Cl 99 SC 99 P6 L10 # 45  
 Dawe, Piers IPtronics  
 Comment Type E Comment Status X  
 Bad URL  
 SuggestedRemedy  
 Should be <http://standards.ieee.org/reading/ieee/interp/index.html>  
 Proposed Response Response Status O

Cl 99 SC 99 P7 L9 # 12  
 Booth, Bradley AppliedMicro  
 Comment Type E Comment Status X  
 Incorrect order of officers, and space should be removed.  
 SuggestedRemedy  
 Change to be:  
 Working Group Chair  
 Working Group Vice-chair  
 Working Group Executive Secretary  
 Working Group Secretary  
 Working Group Treasurer  
 Proposed Response Response Status O

Cl 99 SC 99 P9 L40 # 46  
 Dawe, Piers IPtronics  
 Comment Type E Comment Status X  
 The multiplication symbol and some of the Greek letters are in 10 point.  
 SuggestedRemedy  
 Should all be 9 point in a table.  
 Proposed Response Response Status O

Cl 99 SC ToC P11 L15 # 75  
 D'Ambrosia, John Force10 Networks  
 Comment Type ER Comment Status X  
 Subclauses have the appearance of being under subclauses that they aren't. For example, 45.2.1.7.4 and .5 appear to be subclauses under 45.2.1.6, but they clearly aren't. Same is true with subclauses in Clause 80.  
 SuggestedRemedy  
 correct table of contents. This may require adding headers for the main clauses that the subclause sections are under.  
 Proposed Response Response Status O

Cl A SC P51 L10 # 70  
 Diab, Wael Broadcom  
 Comment Type T Comment Status X  
 The reference to ITU-T G.693 is not dated. This means that the specification could change after this document is published  
 SuggestedRemedy  
 Please date the reference  
 Proposed Response Response Status O