Cl SC **0** P **1** L **2** # 301

Thompson, Geoff GraCaSI

Comment Type **ER** *Comment Status* **A**

Says that this is an Amendment of 802.3-2012". It actually will be an amendment of 802.3-2015.

SuggestedRemedy

Assure that all references outside the clause are current wrt the revision. Update the reference on the cover page WHEN the revision goes to RevCom. Track changes of the revision to make sure they do not affect or are incorporated into the draft.

Response *Response Status* **W**

ACCEPT.

Use commentors suggested remedy when the revision goes to RevCom.

Cl SC **96.3.2.4.5** P **47** L **1** # 52

Ran, Adee Intel

Comment Type **E** *Comment Status* **R**

Title does not match content.

The first sentence of this subclause is general, but the next ones are where SSD and ESD encoding is defined - and they are not related to Sd_n.

SuggestedRemedy

Find a better title, or split this subclause into two, one general and one defining ESD and SSD.

Response *Response Status* **C**

REJECT.

The paragraph captures special code groups SSD, ESD, and Sdn.

Cl **00** SC **0** P L # 525

Anslow, Pete Ciena

Comment Type **E** *Comment Status* **A**

There are many instances of cross-references in the draft that do not point to valid locations within the draft. These should be text shown in Forest Green (with a character tag "External" in FrameMaker).
For example Page 2, line 25:
Clause 23, Clause 24, Clause 32, Clause 36, Clause 40
are all broken links.

SuggestedRemedy

Go through the entire draft making cross-references to locations that are not in the draft text shown in Forest Green (with a character tag "External" in FrameMaker). For locations that are in the draft, make all occurences valid cross-references (clicking on them in the PDF version should move the view to that location).

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **00** SC **0** P L # 551

Anslow, Pete Ciena

Comment Type **E** *Comment Status* **A**

twisted pair should be hyphenated as "twisted-pair"

SuggestedRemedy

Change all occurrences of "twisted pair" to "twisted-pair"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Refer to Comment #514

Cl **00** *SC* **0** *P* *L* # 521

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **A**

The header for the draft says "IEEE 802.3bw Task Force 100BASE-T1 Task Force" which contains "Task Force" twice.

SuggestedRemedy

Change to "IEEE 802.3bw 100BASE-T1 Task Force" throughout the draft

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **00** *SC* **0** *P* *L* # 603

Kobayashi, Shigeru — TE Connectivity

Comment Type **E** *Comment Status* **R**

Clause: Intellectual Property in the PAR
Subclause: 6.1.a
Page: 2
An apostrophe is attached on the top of the explanation.

SuggestedRemedy

If it is unnecessary, it should be removed.

Response *Response Status* **C**

REJECT.

Could not find.

Cl **00** *SC* **0** *P* *L* # 534

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **A**

The term "4B3B" is different from the established style in 802.3 which uses "8B/10B" and "64B/66B"

SuggestedRemedy

Change "4B3B to "4B/3B" throughout the draft

Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **0** *P* *L* # 514

Wienckowski, Natalie — General Motors

Comment Type **E** *Comment Status* **A**

Many different names used for the cabling.
pg 18, line 18: one pair cable
pg 29, line 89: single twisted pair line connection
pg 29, line 20: one pair unshielded twisted pair (UTP)
pg 29, line 25: one pair UTP cable
pg 29, line 32: one pair channel
pg 29, line 45: single twisted pair channel
pg 30, line 5: one pair twisted pair medium
pg 30, line 9: balanced one pair twisted pair cable medium
pg 30, line 11: one pair of balanced cabling
pg 30, line 17: _each wire pair_
pg 32, line 5: one twisted pair channel
pg 70, line 43: one pair cabling system
pg 72, line 22: one-pair balanced cabling system
pg 72, line 22: one pair UTP cable
pg 72, line 24: one pair 15m UTP balanced copper cabling
pg 72, line 26: 1-pair balanced copper cabling
pg 72, line 51: one pair of balanced cabling
pg 72, line 53: 1-pair UTP cables
pg 73, line 1: 1-pair UTP cable
pg 73, line 32: balanced 1-pair UTP cabling pair
pg 74, line 11: UTP channel
pg 74, line 18: UTP cable
pg 74, line 25: UTP cable

SuggestedRemedy

Use consistent name for the cable, replace all instances defined above with: "single balanced twisted pair" as was defined in the 1TPCE objectives.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Use the PAR type decription, "Single balanced twisted-pair".

Strike "automotive cabling" definition in 1.4.x. Additionally strike associated keyword in frontmatter.

Cl **00** *SC* **0** *P* **0** *L* **0** # 382

Hajduczenia, Marek — Bright House Network

Comment Type **ER** *Comment Status* **A**

Draft does not follow the accepted 802.3 template. Primate examples: page 2, page 96 onwards (plenty of empty lines, wrong paragraph styles, wrong symbols resultign from direct copy&paste of text - for example page 30, line 18).

SuggestedRemedy

Apply proper styles to the text and fix all *editorial* inconsistencies within the draft relative to the official 802.3 draft template

Response *Response Status* **W**

ACCEPT.

Cl **00** *SC* **0** *P* **1** *L* **0** # 18

Ran, Adee — Intel

Comment Type **ER** *Comment Status* **A**

Rephrase page header.

SuggestedRemedy

Change "IEEE 802.3bw Task Force 100BASE-T1 Task Force" to "IEEE P802.3bw 100BASE-T1 Task Force".

Response *Response Status* **W**

ACCEPT.

See response to comment #521.

Cl **00** *SC* **0** *P* **1** *L* **55** # 22

Ran, Adee — Intel

Comment Type **T** *Comment Status* **R**

Page numbers labels are in roman numerals in the front matter, but are numeric in the main body. Also, there is a mismatch between the actual page number and the labels on the pages. This makes the numbering ambiguous and impedes with comment recording.

All my comments use the actual page numbers as shown by the PDF reader.

SuggestedRemedy

Preferably, consecutive roman numerals everywhere in the draft.

Response *Response Status* **C**

REJECT.

See response to comment #198.

Cl **00** *SC* **0** *P* **10** *L* **1** # 130

Grow, Robert — RMG Consulting

Comment Type **TR** *Comment Status* **X** *CL45/22*

PDF page 24 - This draft includes management in clause 45 registers. This is the only PHY at speeds of 100 Mb/s or 1000 Mb/s to do so. All previous PHYs use clause 22 registers. Mixing management between the two different register spaces is a bad idea. It also specifies use of the MII as specified in Clause 22. The MII includes the management interface (22.1.1,c), a requirement to report rate of operation via that management interface (22.1.3), a requirement to implement the basic register set (22.2.4, para. 3), etc.

The Clause 22 MII specifications also include text (often requirements) that need to be reviewed as part of this project (as well as for 1000BASE-T1 and GEPOF) needs to review Clause 22 for any text that would contradict the specifications of P802.3bw. To move management to Clause 45 for this PHY would require opening Clause 22 and making significant edits. (1000BASE-T1 and GEPOF will have to do the same for both Clause 22 and Clause 35.)

It is important that all three projects review the tradeoffs for management and be consistent in editing legacy clauses. There is a strong case for all three projects taking a similar technical approach to use of these legacy interfaces not carefully examined probably since 1000BASE-T.

SuggestedRemedy

All register definitions need to be written for Clause 22. Text still needs to be examined since it is likely the extended register set will need to be used, and current text assumes only gigabit PHYs will use the extended register set.

Proposed Response *Response Status* **W**

Cl **00** *SC* **0** *P* **10** *L* **17** # 266

Thompson, Geoff — GraCaSI

Comment Type **E** *Comment Status* **R**

Lines 17 through 21 Titles (and perhaps people) are not up to date.

SuggestedRemedy

Get update from staff and correct.

Response *Response Status* **C**

REJECT.

Check with IEEE staff for when this is supposed to be updated

Cl **00** *SC* **0** *P* **16** *L* **25** # 194

Remein, Duane — Huawei Technologies

Comment Type **ER** *Comment Status* **A**

Change marking to existing text should show additions in underlined text and ALL removed text in strike-out. For example line 25 should read
"IEEE Std 802.3, Clause 23, Clause 24, Clause 32, Clause 36, and Clause 40 and Clause 96.)"
The "and" before "Clause 40" should be in strikeout and that before "Clause 96" in underline.
If this convention is not followed staff editors may incorrectly change the standard.

SuggestedRemedy

Review all changed text in the draft for proper mark-up.

Response *Response Status* **W**

ACCEPT.

Use commentors suggested remedy, all mark-ups will be reviewed and fixed appropiately.

Cl **00** *SC* **0** *P* **16** *L* **54** # 198

Remein, Duane — Huawei Technologies

Comment Type **ER** *Comment Status* **A**

Page numbering is incorrect.

SuggestedRemedy

Renumber to match pdf pg number (or forever be confused).

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Discard roman numerals and use arabic numerals for entire draft.

Cl **00** *SC* **0** *P* **17** *L* **1** # 554

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **A**

The draft contains several figures that are bitmaps rather than FrameMaker drawings.
This is not desirable because:
Bitmaps tend to make the resulting pdf larger than it needs to be.
The text in the figure is not searchable
Any change to the figure needed in a revision of the standard means that the figure has to be re-drawn.

This applies to Figures: 96-17, 96-18, 96-19, 96-21, the Figure in 96B.1, the Figure in 96B.1.1

SuggestedRemedy

Re-draw these figures in FrameMaker (without using colour).

Response *Response Status* **C**

ACCEPT.

See response to comment #563.

Cl **00** *SC* **0** *P* **17** *L* **1** # 553

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **A**

The draft contains multiple figures that use colour.
Since the IEEE style guide (Table 1) says:
"Color in figures shall not be required for proper interpretation of the information." the colour should not be needed and it is inconsistent with the rest of the 802.3 standard.

There is also coloured text in 96.5.4.2 which is also inconsistent with the rest of the 802.3 standard.

SuggestedRemedy

Remove the colour from all figures.
Remove the colour from the text in 96.5.4.2

Response *Response Status* **C**

ACCEPT.

Figures are to be redrawn for several reasons, color will be removed. Color will also be removed from Matlab code.

Cl **00** *SC* **0** *P* **2** *L* **23** # 152

Amason, Dale — Freescale

Comment Type **E** *Comment Status* **A**

Use lower case "a" in phrase "For 100BASE-T1, A set of"

SuggestedRemedy

For 100BASE-T1, a set of

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See response to comment #420

Cl **00** *SC* **0** *P* **2** *L* **36** # 302

Thompson, Geoff — GraCaSI

Comment Type **ER** *Comment Status* **A**

Text that should accompany table is missing.

SuggestedRemedy

Add the following text: List of special symbols

The following is a list of special symbols and operators that may be used within this standard. When printing this document, this table should be checked to see that each printed symbol is appropriate for

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Suggested remedy is not complete but it is the assumption of the editor that there is missing text surrounding the Special Characters Table. This text will be updated appropriately.

Cl **00** *SC* **0** *P* **26** *L* **40** # 157

Amason, Dale — Freescale

Comment Type **T** *Comment Status* **A**

division symbol included in tx_enable_mii name. Same with tx_error_mii name on line 43. Is this intended?

SuggestedRemedy

Remove if not intentional.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Not a division symbol, but a ":" with a strikethrough. Since Clause 96 is a new clause there shouldn't be any strikethrough or underlined text. Draft will be scrubbed of these errors.

Cl **00** *SC* **0** *P* **29** *L* **18** # 195

Remein, Duane — Huawei Technologies

Comment Type **ER** *Comment Status* **A**

Paragraphs styles vary significantly from IEEE Style Guide and current 802.3 template.

SuggestedRemedy

Update all paragraph and character styles to comply with IEEE Style Guide and current 802.3 template. Items to consider include:
external references s/b in Char Style External (forest green)

Response *Response Status* **W**

ACCEPT.

Use commentors suggested remedy, paragraphs and characters will be updated to comply with the IEEE style guide.

Cl **00** *SC* **0** *P* **29** *L* **35** # 180

Remein, Duane — Huawei Technologies

Comment Type **E** *Comment Status* **A**

There is not need to include the sub-clause title in a reference.

SuggestedRemedy

Strike "100BASE-T1 Physical Coding Sublayer (PCS) Functions" here and remove any other section titles in cross references in the draft

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cross references need to be reviewed and correct. Use commentors suggested remedy to remove subclause titles from cross references.

Cl **00** *SC* **0** *P* **3** *L* **0** # 166

Law, David — HP

Comment Type **E** *Comment Status* **A**

'IEEE 802.3bw Task Force 100BASE-T1 Task Force' should read 'IEEE 802.3bw 100BASE-T1 Task Force'.

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT.

See response to comment 521.

Cl **00** *SC* **0** *P* **4** *L* **2** # 153

Amason, Dale — Freescale

Comment Type **E** *Comment Status* **A**

Missing comma following phrase "In 100BASE-T1"

SuggestedRemedy

Add comma: In 100BASE-T1,

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **00** *SC* **0** *P* **4** *L* **3** # 154

Amason, Dale — Freescale

Comment Type **E** *Comment Status* **A**

Missing underline for Clause 96.

SuggestedRemedy

Add underline to "and Clause 96."

Response *Response Status* **C**

ACCEPT.

See response to comment 194.

Cl **00** *SC* **0** *P* **4** *L* **8** # 303

Thompson, Geoff — GraCaSI

Comment Type **ER** *Comment Status* **A**

Page numbering does not follow 802.3 convention as it is called out in this note. This will cause great confusion during balloting. (Note that the balloting cover letter does not address this issue.

SuggestedRemedy

Change the page numbering on all subsequent drafts so that the printed page number matches the PDF page number for the duration of the balloting process. The IEEE editor will change this as appropriate during preparation for publication after the standar

Response *Response Status* **W**

ACCEPT.

See response to comment 198. Discard roman numerals and use arabic numerals for entire draft.

Cl **00** *SC* **0** *P* **43** *L* **35** # 155

Amason, Dale — Freescale

Comment Type **E** *Comment Status* **A**

PMA_UNIDATA.indicate in paragraph but PMA_UNIDATA_indicate in Fig 96-14

SuggestedRemedy

Make paragraph and figure consistent

Response *Response Status* **C**

ACCEPT.

Use PMA_UNIDATA.indicate consistently.

Cl **01** *SC* *P* **5** *L* **1** # 118

Grow, Robert — RMG Consulting

Comment Type **ER** *Comment Status* **A**

PDF page 19 - This page does not belong in an ballot draft!

SuggestedRemedy

Remove page 5-6, and probably blank page 7 (I don't remember nor have the time to check if each Change clause is to start on an odd or even numbered page).

Response *Response Status* **W**

ACCEPT.

Pages 5-7 will be deleted.

Cl **01** *SC* **1** *P* **19** *L* **1** # 137

Booth, Brad — Microsoft

Comment Type **ER** *Comment Status* **A**

Notes for editors should be removed from the working group ballot draft.

SuggestedRemedy

Delete pages associated with Notes for editors.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #118

Cl **01** *SC* **1.2** *P* **17** *L* **10** # 59

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

double "and"

SuggestedRemedy

Delete the second "and"

Response *Response Status* **W**

ACCEPT.

Cl **01** *SC* **1.3** *P* **2** *L* **7** # 523

Anslow, Pete Ciena

Comment Type **E** *Comment Status* **A**

The editing instructions are shown on page 1 of the draft. The only instruction that uses underline and strikeout font is "Change".
The editing instruction here is "Insert", so the text below it should not be in underline font.

SuggestedRemedy

Show the inserted text in normal font

Response *Response Status* **C**

ACCEPT.

Remove underline from IEC references.

Cl **01** *SC* **1.4** *P* **16** *L* **23** # 37

Ran, Adee Intel

Comment Type **TR** *Comment Status* **A**

"set of ternary PAM3" is unclear and redundant. Sets are unordered, the symbols are ternary, and PAM3 is the electrical modulation. This seems to mean "a pair of ternary symbols", which would be consistent with previously discussed PHYs.

Also, "(out of 9 possible combinations)" is confusing and unnecessary in this context.

SuggestedRemedy

Change "set of ternary PAM3 symbols" to "pair of ternary symbols".

Delete (out of 9 possible combinations).

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

see response to comment #420 for change to "set of ternary PAM3 symbols".

Do not remove "(out of 9 possible conbinations)"

Cl **01** *SC* **1.4** *P* **16** *L* **24** # 57

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

missing "that"

SuggestedRemedy

insert "that" after ", when representing data".

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change to "that, when representing data"

Cl **01** *SC* **1.4** *P* **16** *L* **53** # 23

Ran, Adee Intel

Comment Type **TR** *Comment Status* **A**

The new text is inconsistent with previous descriptions of ESD. code-group was earlier defined as two ternary symbols, but ESD has six, so is not "a code-group".

And small numbers in the text should be spelled out.

SuggestedRemedy

Change

"For 100BASE-T1, this delineates data transmission from idle. ESD consists of the code-group of 3 consecutive ternary pairs named as ESD1-3 as defined in 96.3.2.3"

to

"For 100BASE-T1, the ESD consists of three code-groups as defined in 96.3.2.4.5."

Response *Response Status* **W**

ACCEPT.

Cl **01** *SC* **1.4** *P* **17** *L* **2** # 58

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

Newly inserted text should be underlined, deleted text should be struck out. Comment applies to numerous places in clause 1.

SuggestedRemedy

Add "and" in strikeout before "Clause 40". Underline ", and Clause 96".

Apply elsewhere as necessary.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Add "and" before "Clause 40" with strikedout, "and Clause 96" will be underlined.

Cl **01** *SC* **1.4** *P* **17** *L* **42** # 24

Ran, Adee Intel

Comment Type **TR** *Comment Status* **A**

The new text is inconsistent with previous descriptions of SSD. See similar comment about ESD.

SuggestedRemedy

Change

"For 100BASE-T1, a code-group pattern between two distinct data transmissions onto MDI. SSD consists of the code-group of 3 consecutive ternary pairs named as SSD1-3 as defined in 96.3."

to

"For 100BASE-T1, the SSD consists of three code-groups, as defined in 96.3.2.4.5."

Response *Response Status* **W**

ACCEPT.

Cl **01** *SC* **1.4** *P* **18** *L* **15** # 231

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **A**

1.4.x name: definition uses Paragraph Tag D3,Definitions. (See Clause 96.)
seems a bit out of place.
Same for [abbreviations use paragraph tag AcrList,ac] on line 41
And for Notes for editors (not to be included in the published draft) pg 19-20

SuggestedRemedy

strike both

Response *Response Status* **C**

ACCEPT.

Delete Editor's Notes from published draft, and correct tags.

Cl **01** *SC* **1.4** *P* **18** *L* **15** # 60

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

template text

SuggestedRemedy

Delete "name: definition uses Paragraph Tag D3,Definitions. (See Clause 96.)"

Response *Response Status* **W**

ACCEPT.

Cl **01** *SC* **1.4** *P* **18** *L* **17** # 38

Ran, Adee Intel

Comment Type **E** *Comment Status* **A**

"ohm" and "Ohm" used interchangably in the draft. Should use the Omega symbol.

SuggestedRemedy

Replace here and throughout.

Response *Response Status* **C**

ACCEPT.

Replace all instances of "ohm", "Ohm", and "O" with "Ω".

Cl **01** *SC* **1.4** *P* **18** *L* **18** # 39

Ran, Adee Intel

Comment Type **E** *Comment Status* **A**

Seems that "are" should be either "as" or "which are"

SuggestedRemedy

Please correct the sentence

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change
"characteristics are provided in 96.7.1"
to
"characteristics as provided in 96.7.1"

Cl **01** *SC* **1.4** *P* **18** *L* **32** # 61

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

This whole paragraph, and especially the normative statement, is out of place in the definitions clause. The term is used as a subclause header and does not need a definition.

SuggestedRemedy

Delete the "PHY-Initialization" paragraph.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #132

Cl **01** *SC* **1.4** *P* **2** *L* **18** # 524

Anslow, Pete Ciena

Comment Type **E** *Comment Status* **A**

The convention used throughout subclause 1.4 is that the term being defined (up to and including ":") is in bold font.
Some definitions use this format, but many do not.

SuggestedRemedy

Use bold font for all of the terms being defined.

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **01** *SC* **1.4** *P* **4** *L* **14** # 111

Grow, Robert RMG Consulting

Comment Type **E** *Comment Status* **A**

PDF page 18 - Format problems.

SuggestedRemedy

p.4, l,15, etc., The term is to be bold, not just the sub clause number. Fix for all inserted definitions.
p.4, l.16, Missing space after comma

Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4** *P* **4** *L* **20** # 119

Grow, Robert RMG Consulting

Comment Type **ER** *Comment Status* **R**

PDF page 18 - You are perpetuating a violation of IEEE style, a capital B indicates byte, and lower case b indicates bit. This was violated for 8B/10B (should have been 8b/10b) with justification that the inventors used a capital B to describe their encoding. This continues to be a problem and shows up with B being ambiguous (64B/65B).

SuggestedRemedy

Follow the style manual, the abbreviation for bit is lower case b.

Response *Response Status* **W**

REJECT.

A lower case b is mathematically correct, however using a Capital B is consistant with other 802.3 Clauses.

Cl **01** *SC* **1.4** *P* **4** *L* **32** # 132

Grow, Robert — RMG Consulting

Comment Type **TR** *Comment Status* **A**

PDF page 18 - Definitions are not the place for normative requirements.

SuggestedRemedy

Rewrite to remove the shall and assure the normative requirement is in clause 96.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Delete normative requirement. Change the "PHY-Initialization" paragraph as follows

On page 18, line 29, Change paragraph topic from" PHY-Initialization" to "FORCE Mode".

Page 18 line 30, change

"A primitive PHY-Initialization procedure is used for MASTER and SLAVE assignment." to

" A PHY initialization procedure for FORCE mode with 100Mb/s data rate is used for MASTER and SLAVE assignment to achieve link acquisition between two 100BASE-T1 link partners, see section 96.4.4. Force Mode sets the link control manually."

Cl **01** *SC* **1.4.142** *P* **16** *L* **23** # 267

Thompson, Geoff — GraCaSI

Comment Type **E** *Comment Status* **A**

The text A set of ternary PAM3 symbols" is confusing as a PAM3 symbol is already ternary.

SuggestedRemedy

Change text to read: "A ternary set of PAM3 symbols..."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

see response to comment #420.

Cl **01** *SC* **1.4.142** *P* **16** *L* **23** # 146

Booth, Brad — Microsoft

Comment Type **E** *Comment Status* **A**

Uppercase A

SuggestedRemedy

Change the uppercase A in "For 100BASE-T1, A set..." to lowercase.

Response *Response Status* **C**

ACCEPT.

see response to comment #420.

Cl **01** *SC* **1.4.142** *P* **16** *L* **23** # 395

Hajduczenia, Marek — Bright House Network

Comment Type **E** *Comment Status* **A**

"For 100BASE-T1, A set of ternary " should likely be "For 100BASE-T1, a set of ternary " - note the unnecessary capital "A"

SuggestedRemedy

Per comment

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #420

Cl **01** *SC* **1.4.142** *P* **16** *L* **25** # 148

Booth, Brad — Microsoft

Comment Type **ER** *Comment Status* **A**

Editing is not following the guidelines listed on page 15.

SuggestedRemedy

In 1.4.142, there is no strikethrough of the "and" in front of Clause 40 at end of definition.
In 1.4.157, 1.4.163 and 1.4.183, missing "IEEE Std 802.3," at end of definition.
In 1.4.183, there is no strikethrough of the "and" in front of Clause 40 and no underscore of ", and Clause 96" at end of definition.
In 1.4.313, there is no strikethrough of the "and" in front of Clause 82, and there is an extra "and" at end of definition.
In 1.4.314, there is no strikethrough of the "and" in front of Clauses 82 to 89 at end of definition.
In 1.4.315, the text in the parathesis at the end of the definition does not match 802.3-2012 or show the edits correctly.
In 1.4.340, no strikethrough of "and" between 100BASE-T2 and 1000BASE-T, and no underscore under the inserted comma.
In 1.4.350, no strikethrough of "or" between 100BASE-T2 and 1000BASE-T, and no underscore under the inserted comma. The text at the end of the definition does not match that in 802.3-2012.

Response *Response Status* **W**

ACCEPT.

Cl **01** *SC* **1.4.142** *P* **16** *L* **25** # 396

Hajduczenia, Marek — Bright House Network

Comment Type **E** *Comment Status* **A**

missing serial comma in "Clause 23, Clause 24, Clause 32, Clause 36, Clause 40 and Clause 96" before the last "and" - see for more details:
http://grammar.about.com/od/grammarfaq/f/QAoxfordcomma.htm

SuggestedRemedy

Change "Clause 23, Clause 24, Clause 32, Clause 36, Clause 40 and Clause 96" to "Clause 23, Clause 24, Clause 32, Clause 36, Clause 40, and Clause 96"
Scrub all definitions in 1.4.xxx for missing serial comma (there are at least 5 instances I came across).

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy. Draft will be scrubbed for all missing commas.

Cl **01** *SC* **1.4.142** *P* **2** *L* **18** # 482

Mitsuru, Iwaoka — Yokogawa Electric Co

Comment Type **E** *Comment Status* **A**

A defined term "code_group:" should be bold.

SuggestedRemedy

Make "code_group:" bold.

Response *Response Status* **C**

ACCEPT.

See response to comment 524.

Cl **01** *SC* **1.4.142** *P* **2** *L* **23** # 526

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **A**

In the second to last sentence:
"For 100BASE-T1, A set of ternary PAM3 symbols (out of 9 possible combinations), when representing data, conveys 3 bits, as defined in 96.3."
"A" should be "a" and the IEEE Style Manual 12.2 c) says "In general text, isolated numbers less than 10 should be spelled out.", so "out of 9" should be "out of nine" and "3 bits" should be "three bits".

In the last sentence, "... Clause 36, and Clause 40.)" has been changed to : "... Clause 36, Clause 40, and Clause 96.)". The insertion of "and Clause 96" is correctly shown in underline font but the removal of the "and " before "Clause 40" is not.

SuggestedRemedy

In the second to last sentence:
Change "A" to "a", "9" to "nine" and "3 to three".

In the last sentence, show "and " in strikethrough font before "Clause 40"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 152, 37, and 194.

Cl **01** *SC* **1.4.142** *P* **2** *L* **23** # 471

Mitsuru, Iwaoka — Yokogawa Electric Co

Comment Type **E** *Comment Status* **A**

A capital "A" after comma.
(This is the same comment as the D1.0 TF Review comment #90, which is accepted, but not implemented.)

SuggestedRemedy

Uncapitalize the "A".

Response *Response Status* **C**

ACCEPT.

See response to comment #420.

Cl **01** *SC* **1.4.157** *P* **16** *L* **32** # 397

Hajduczenia, Marek — Bright House Network

Comment Type **E** *Comment Status* **A**

Incorrect link to Clause 96 in text "(See Clause 40 and Clause 96.)". Currently link points to Clause 200 and should to Clause 96.

SuggestedRemedy

Fix the broken link

Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.157** *P* **2** *L* **132** # 316

Zimmerman, George — CME Consulting, Inc.

Comment Type **E** *Comment Status* **R**

Text for 100BASE-T1 is identical to text for 1000BASE-T, but it takes the reader on a careful read to see there are no differences. Show the differences rather than add identical text

SuggestedRemedy

Change line 27 to read: "In 1000BASE-T and 100BASE-T1..."
Delete inserted text lines 32-36, up to "to complete a stream." (keep "and clause 96).
Change line 29 to read "GMII or MII, respectively,"
Insert "For 1000BASE-T" on line 32 so that sentence after "to complete a stream." now reads: "For 1000BASE-T these include two convolutional..."

Response *Response Status* **C**

REJECT.

It is easier to understand if they are separate statements.

Cl **01** *SC* **1.4.157** *P* **2** *L* **36** # 527

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **A**

In the base standard, 1.4.157, 1.4.163, 1.4.183, 1.4.381, 1.4.385 all end with a reference in brackets that starts "(See IEEE Std 802.3, Clause ..."
This is because these definitions are copied out of the 802.3 standard into other documents.
However, in the P802.3bw draft, the text "IEEE Std 802.3, " is missing.

SuggestedRemedy

Put the missing "IEEE Std 802.3, " back in these definitions (in normal font).

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **01** *SC* **1.4.163** *P* **2** *L* **41** # 317

Zimmerman, George — CME Consulting, Inc.

Comment Type **E** *Comment Status* **R**

Text for 100BASE-T1 is identical to text for 1000BASE-T, but it takes the reader on a careful read to see there are no differences. Show the differences rather than add identical text

SuggestedRemedy

Change line 38 to read: "In 1000BASE-T and 100BASE-T1..."
Change line 39 to read "GMII or MII, respectively,"
Delete inserted text lines 41-45, up to "arriving on" and insert, "or, ", and add "as appropriate." at the end of the sentence, so that line 41 reads:
"groups followed by code-groups encoded from the data octets arriving on TXD<7:0> via the GMII or TXD<3:0> via the MII, as appropriate. (See Clause 40 and Clause 96)."

Response *Response Status* **C**

REJECT.

For data mode, this is not identical. See response to comment #457.

Cl **01** *SC* **1.4.183** *P* **17** *L* **1** # 140

Booth, Brad — Microsoft

Comment Type **TR** *Comment Status* **A**

Added text doesn't read correctly. The overlying 802.3 definition of ESD is that it is a code-group used to terminate a normal data transmission. The new sentence reads as though 100BASE-T1 is overriding that definition.

SuggestedRemedy

Change the sentence to read:
For 100BASE-T1, the ESD is indicated by three consecutive ternary pairs as defined in 96.3.2.3.

Removed the naming of the ternary pairs to simplify.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change
"For 100BASE-T1, this delineates data transmission from idle. ESD consists of the code-group of 3 consecutive ternary pairs names as ESD1-3 as defined in 96.3.2.3."

to

"For 100BASE-T1, the ESD consists of three code-groups, as defined in 96.3.2.4.5."

Cl **01** *SC* **1.4.183** *P* **17** *L* **1** # 387

Hajduczenia, Marek — Bright House Network

Comment Type **T** *Comment Status* **A**

"this delineates data transmission from idle" - unclear what "this" means in this context.

SuggestedRemedy

Replace "this" to "the ESD"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #140.

Cl **01** *SC* **1.4.183** *P* **17** *L* **1** # 264

Thompson, Geoff — GraCaSI

Comment Type **TR** *Comment Status* **A**

Regarding the text: this delineates data transmission from idle." is incorrect in technical meaning and grammar.

SuggestedRemedy

Change to read: "this delineates the transition from data transmission to idle."

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #140.

Cl **01** *SC* **1.4.183** *P* **17** *L* **3** # 398

Hajduczenia, Marek — Bright House Network

Comment Type **E** *Comment Status* **A**

"Clause 96" was likely added in this draft - it does not exist in 802.3-2012 for sure

SuggestedRemedy

Add proper editorial markup to indicate changes from base standard.

Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.183** *P* **3** *L* **1** # 528

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **A**

The IEEE Style Manual 12.2 c) says "In general text, isolated numbers less than 10 should be spelled out."
In the added sentence in 1.4.183 "of 3" should be "of three"

The IEEE Style Manual 12.2 e) says "Dashes should never be used because they can be misconstrued as subtraction signs."
In the added sentence in 1.4.183 "named as ESD1-3" should be "named as ESD1 to ESD3"

SuggestedRemedy

In the added sentence in 1.4.183 change "3" to "three" and change "ESD1-3" to "ESD1 to ESD3".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Similar comment in 140, see the proposed change for this text there.

Cl **01** *SC* **1.4.183** *P* **3** *L* **2** # 113

Grow, Robert — RMG Consulting

Comment Type **E** *Comment Status* **A**

PDF page 17 - Incorrect/incomplete change marking.

SuggestedRemedy

p.3, l. 2, moved and (not deleted and inserted as underscore), new clause not underscored.
p.3, l.10, double and (probably one moved rather than strikethrough and locate before Clause 82.
p.3, l.19, old and was deleted rather than strikethrough p.3, l.24, old and was deleted rather than strikethrough p.3, l.26, old and was deleted rather than strikethrough p.3, l.31, old or was deleted rather than strikethrough p.4, l.2, insert not underscore (and Clause 96) p.4, l.8, almost got it, the semicolon and space should be underscore

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 194.

Cl **01** *SC* **1.4.183** *P* **3** *L* **2** # 529

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **A**

In the last sentence, "... Clause 32, and Clause 40.)" has been changed to : "... Clause 32, Clause 40, and Clause 96.)". The insertion of ", and Clause 96" is not shown in underline font and the removal of the "and " before "Clause 40" is not shown in strikethrough font.

Similar issue for 1.4.313 and 1.4.314

SuggestedRemedy

In the last sentence of 1.4.183, show "and " in strikethrough font before "Clause 40" and show ", and Clause 96" in underline font.
In the last sentence of 1.4.313, show "and " in strikethrough font before "Clause 82" and remove the first "and" in "and and Clause 96."
In the last sentence of 1.4.314, show "and " in strikethrough font before "Clauses 82 to 89"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response in comment 194.

Cl **01** *SC* **1.4.313** *P* **17** *L* **10** # 399

Hajduczenia, Marek — Bright House Network

Comment Type **E** *Comment Status* **A**

"and and Clause 96" - unnerecessary repetition of "and"

SuggestedRemedy

Remove one instance of "and" - likely, the one without underline markup

Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.313** *P* **17** *L* **5** # 196

Remein, Duane — Huawei Technologies

Comment Type **ER** *Comment Status* **R**

The proposed additions to the examples in 1.4.313, 1.4.314 and 1.4.315 are extraneous. The list is an example and does not exhaustively list all PCS's, Many other examples exist in the standard. Unnecessary changes can introduce errors into the standard and should be avoided.

SuggestedRemedy

Strike these changes.

Response *Response Status* **W**

REJECT.

Definitions are still taken from published standards and included in the IEEE standards dictionary online. Due to this to provide context to the definition after it is included in the IEEE standards dictionary online we include the IEEE802.3 clause the definition relates to.

Cl **01** *SC* **1.4.313** *P* **3** *L* **10** # 472

Mitsuru, Iwaoka — Yokogawa Electric Co

Comment Type **E** *Comment Status* **A**

A duplicated "and".
(This is the same comment as the D1.0 TF Review comment #91, which is accepted, but not implemented.)

SuggestedRemedy

Remove the redundant "and".

Response *Response Status* **C**

ACCEPT.

See response to comment 399.

Cl **01** *SC* **1.4.315** *P* **17** *L* **24** # 383

Hajduczenia, Marek — Bright House Network

Comment Type **ER** *Comment Status* **A**

The comparison between 1.4.315 in 802.3-2013 and 1.4.315 in draft D1.2 shows there are more changes than marked in the draft right now.

SuggestedRemedy

Insert the word ",and" between "66" and "83" and show it in strikethrough.
Review the remaining definitions in 1.4 and:
a) copy text from 802.3-2012 as base line
b) show all text to be removed in strikethrough
c) show all new text in underline
The purpose of editorial instructions is to make staff editor aware of what changes need to be done (removals, additions) and the lack of complete editorial instructions will lead to incorrect merging of P802.3bw into base standard.

Response *Response Status* **W**

ACCEPT.

Add "and" after "66, " with strikeout. Review remaining definitions for mark-up errors.

Cl **01** *SC* **1.4.315** *P* **3** *L* **23** # 530

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **A**

The last sentence of 1.4.315 has been changed from the published version (Clauses added in several places) without any changemarks.
Since the published version of this text does not have "Clause" in front of each reference, keep to this style.

SuggestedRemedy

Show as:
"(For example, See IEEE Std 802.3, Clauses 7, 12, 14, 16, 17, 18, 23, 24, 32, 36, 40, 51, 62, 63, 66, and 83, and 96.)" with the first "and " in strikethrough font and ", and 96" in underline font.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Similar to comment 194, additionally use commentors suggested remedy of using only the Clause # after the initial use of the word "Clauses" at the end of each definition in 1.4.

Cl **01** *SC* **1.4.377** *P* **17** *L* **42** # 139

Booth, Brad — Microsoft

Comment Type **T** *Comment Status* **A**

Added text doesn't read correctly. The new sentence reads as though 100BASE-T1 is overriding the 802.3 definition at the start of the definition.

SuggestedRemedy

Change to read:
For 100BASE-T1, the SSD is indicated by three consecutive ternary pairs as defined in 96.3.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Similar to comment 140. Change
"For 100BASE-T1, a code-group pattern between two distinct data transmissions onto MDI. SSD consists of the code-groups of 3 consecutive ternary pairs named as SSD1-3 as defined in 96.3."
to
"For 100BASE-T1, the SSD consists of three consecutive ternary pairs (SSD1, SSD2 and SSD3) as defined in 96.3.2.3."

Cl **01** *SC* **1.4.377** *P* **3** *L* **43** # 531

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **A**

The IEEE Style Manual 12.2 c) says "In general text, isolated numbers less than 10 should be spelled out."
In the added sentence in 1.4.377 "of 3" should be "of three"

The IEEE Style Manual 12.2 e) says "Dashes should never be used because they can be misconstrued as subtraction signs."
In the added sentence in 1.4.183 "named as SSD1-3" should be "named as SSD1 to SSD3"

SuggestedRemedy

In the added sentence in 1.4.377 change "3" to "three" and change "SSD1-3" to "SSD1 to SSD3".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Similar comment in 139, see the proposed change for this text there.

Cl **01** *SC* **1.4.377** *P* **3** *L* **43** # 331

Zimmerman, George — CME Consulting, Inc.

Comment Type **TR** *Comment Status* **A**

Break in sentences breaks the link between the description of SSD code groups and 100BASE-T1 and makes it generic - statement shoudl only apply to 100BASE-T1.

SuggestedRemedy

Modify line 43, either by:
Replacing,"onto MDI. SSD consists..." with "onto MDI, so that the SSD consists..." (preferable)
or:
Insert, "For 100BASE-T1" prior to "SSD consists", (acceptable, but not preferred)

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Similar to comment #24, see the proposed change for this text.

Cl **01** *SC* **1.4.381** *P* **18** *L* **2** # 149

Booth, Brad — Microsoft

Comment Type **ER** *Comment Status* **A**

Missing a comma and underscore.

SuggestedRemedy

Insert a comma after 100BASE-T1. Underscore "and Clause 96".

Response *Response Status* **W**

ACCEPT.

Cl **01** *SC* **1.4.381** *P* **4** *L* **2** # 483

Mitsuru, Iwaoka — Yokogawa Electric Co

Comment Type **T** *Comment Status* **A**

96.3.2.3 (P.27, line 31) specifies that a symbol period is nominally equal to 15ns.

SuggestedRemedy

Replace "thirty" by "fifteen".

Response *Response Status* **C**

ACCEPT.

See response to comment 424.

Cl **01** *SC* **1.4.382** *P* **18** *L* **8** # 150

Booth, Brad — Microsoft

Comment Type **ER** *Comment Status* **A**

Underscore missing.

SuggestedRemedy

The semi-colon and space after "125 MBd" and before "for 100BASE-T1" should have an underscore.

Response *Response Status* **W**

ACCEPT.

Cl **01** *SC* **1.4.382** *P* **4** *L* **8** # 532

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **A**

After "125 MBd", "; " has been added, but is not shown in underline font.

SuggestedRemedy

Show "; " in underline font

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #150

Cl **01** *SC* **1.4.385** *P* **18** *L* **11** # 151

Booth, Brad — Microsoft

Comment Type **ER** *Comment Status* **A**

Missing information.

SuggestedRemedy

Missing "IEEE Std 802.3" in the information inside the paranthesis.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Add "IEEE Std 802.3" at the beginning of the paragraph.

Cl **01** *SC* **1.4.x** *P* **17** *L* **15** # 388

Hajduczenia, Marek — Bright House Network

Comment Type **T** *Comment Status* **A**

Not sure what is wrong with the definitions in lines 15-33 and why they were not inserted into the list already with the proper numbering.

SuggestedRemedy

a) remove definition in line 15 - seems like garbage
b) add numbers for definitions in lines 17 - 33 and insert them into the list already in place above.
c) confirm that addigned numbers to definitions 1.4.142 through 1.4.385 are correct - it seems they displace existing definitions and should be added behind existing definitions. See 802.3bm for an example of how definitions are added to existing lists

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

IEEE staff editor will order appropriately

Cl **01** *SC* **1.4.x** *P* **18** *L* **15** # 197

Remein, Duane — Huawei Technologies

Comment Type **ER** *Comment Status* **A**

These additions are incorrectly specified. Should include in the editing instruction "Insert the following after 1.4.x" where 1.4.x is the para preceding the added para.
For example:
"Insert the following after 1.4.95:
1.4.95a Automotive Cabling: Balanced 100 ohm one pair cable and associated hardware having specified transmission characteristics are provided in 96.7.1."

SuggestedRemedy

Correct para numbering and editing instructions to follow current style and template.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Staff editors will ensure that the new definitions are added in the appropriate order.

Cl **01** *SC* **1.4.x** *P* **18** *L* **16** # 135

Booth, Brad — Microsoft

Comment Type **ER** *Comment Status* **A**

Definition of "name" seems to be remnant of original base text.

SuggestedRemedy

Remove 1.4.x name.

Response *Response Status* **W**

ACCEPT.

Cl **01** *SC* **1.4.x** *P* **18** *L* **17** # 265

Thompson, Geoff — GraCaSI

Comment Type **TR** *Comment Status* **R**

Not a definition because of the use of the words are provided"

SuggestedRemedy

Change text to read: "...are call out in..."

Response *Response Status* **W**

REJECT.

Strike "automotive cabling" definition in 1.4.x. Additionally strike associated keyword in frontmatter. "Single balanced twisted-pair" will be consistantly used throughout draft.

Cl **01** *SC* **1.4.x** *P* **18** *L* **18** # 147

Booth, Brad — Microsoft

Comment Type **E** *Comment Status* **A**

Use wording that matches what exists in 802.3.

SuggestedRemedy

Change to read:
4B3B: For IEEE 802.3, the data encoding technique used by 100BASE-T1 when...

Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.x** *P* **18** *L* **28** # 304

Thompson, Geoff GraCaSI

Comment Type **ER** *Comment Status* **A**

RE: PHY-Initialization" This is a descriptive explanation and specification"," not a definition.

SuggestedRemedy

Move the specification and rationale aspect to the 100BASE-T1 clause and replace this with an actual definition.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #132. PHY-Initilization paragraph has been replaced with FORCE mode paragaph.

Also refer to comment #141

Cl **01** *SC* **1.4.x** *P* **18** *L* **29** # 141

Booth, Brad Microsoft

Comment Type **TR** *Comment Status* **A**

This definition seems to be in the wrong place; especially considering there is a shall statement in the defintion.

SuggestedRemedy

Remove definition and move text to 96.6.2.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #132. The paragraph has been rewritten and the normative "shall" statement will be moved to Clause 96.

Cl **01** *SC* **1.4.x** *P* **4** *L* **15** # 476

Mitsuru, Iwaoka Yokogawa Electric Co

Comment Type **E** *Comment Status* **A**

It is necessary to define a term "100BASE-T1".

SuggestedRemedy

Insert a following new definition.

1.4.x 100BASE-T1: IEEE 802.3 Physical Layer specification for a 100 Mb/s Ethernet using one pair of balanced copper cabling. (See IEEE Std 802.3, Clause 96.)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

PDF page 18 line 14, Insert "1.4.x 100BASE-T1: IEEE 802.3 Physical Layer specification for a 100 Mb/s Ethernet full duplex local area network over a single balanced twisted-pair. (See IEEE Std 802.3, Clause 96.)"

Cl **01** *SC* **1.4.x** *P* **4** *L* **15** # 475

Mitsuru, Iwaoka Yokogawa Electric Co

Comment Type **E** *Comment Status* **A**

A suprious definition "1.4.x name" exists.

SuggestedRemedy

Delete a definition of "1.4.x name".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Similar comment in 388, see the proposed change for this text there.

Cl **01** *SC* **1.4.x** *P* **4** *L* **16** # 533

Anslow, Pete Ciena

Comment Type **E** *Comment Status* **A**

The first 1.4.x is:
"1.4.x name: definition uses Paragraph Tag D3,Definitions. (See Clause 96.)" which is spurious and should be deleted.

SuggestedRemedy

Delete:
"1.4.x name: definition uses Paragraph Tag D3,Definitions. (See Clause 96.)"

Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.x** *P* **4** *L* **17** # 562

Anslow, Pete Ciena

Comment Type **ER** *Comment Status* **A**

Subclause 1.4 starts with:
"For the purposes of this document, the following terms and definitions apply."

1.4.x Automotive Cabling defines a term "Automotive Cabling" that is not used in the draft. Since it is not used, it should not be defined here.

SuggestedRemedy

Delete the definition starting: "1.4.x Automotive Cabling:"

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #514.

Cl **01** *SC* **1.4.x** *P* **4** *L* **18** # 592

Dawe, Piers Mellanox

Comment Type **ER** *Comment Status* **A**

The term "Automotive Cabling" is not used anywhere else in this draft. There are many kinds of cabling in cars; trying half-heartedly to hijack two regular words for just one kind of cabling is not viable.

SuggestedRemedy

Delete the definition.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #514.

Cl **01** *SC* **1.4.x** *P* **4** *L* **20** # 535

Anslow, Pete Ciena

Comment Type **E** *Comment Status* **A**

The definition for 1.4.x 4B3B could be written more clearly.
Also use 4B/3B as per another comment and include full reference to IEEE Std 802.3 as per other comments.

SuggestedRemedy

Change:
"1.4.x 4B3B: In the 100BASE-T1 PHY, the data encoding technique used by the PHY when converting MII data (4B-4 bits) with 25 MHz clock to 3 bits (3B) wide of data that is transmitted during one 33.333 MHz clock period. (See 96.3.2.2.2)" to:
"1.4.x 4B/3B: In the 100BASE-T1 PHY, the data encoding technique used by the PHY when converting 4-bit (4B) MII data with 25 MHz clock to 3-bit (3B) data with 33.333 MHz clock. (See IEEE Std 802.3, 96.3.2.2.2)"

Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.4.x** *P* **4** *L* **25** # 536

Anslow, Pete Ciena

Comment Type **E** *Comment Status* **A**

In the definition for "1D-PAM3", "(See Clause 96.3.2)" should be "(See IEEE Std 802.3, Clause 96.3.2)" because these definitions are copied out of the 802.3 standard into other documents.

SuggestedRemedy

Change "(See Clause 96.3.2)" to "(See IEEE Std 802.3, Clause 96.3.2)"

Response *Response Status* **C**

ACCEPT.

Similar comment in 194, see the proposed change for this text there.

Cl **01** *SC* **1.4.x** *P* **4** *L* **29** # 473

Mitsuru, Iwaoka — Yokogawa Electric Co

Comment Type **E** *Comment Status* **A**

The current definition of "PHY-Initialization" describes why a primitive PHY-Initialization is necessary, but does not describe "PHY-Initialization" itself.
Also, according to the 2014 IEEE-SA Standards Style Manual 10.6.3 (Construction of the definitions clause), each definition shall not contain requirements or elaborative text. The last sentence of the "PHY-Initialization" definition seems to specify a requirement of start-up procedure.

SuggestedRemedy

Move current description to subclause 96.6.2 as the first paragraph, and modify the definition as follows:

1.4.x PHY-Initialization: A primitive used to assign MASTER and SLAVE by the station management entry instead of the auto-negociation process.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #132 and comment #141

Cl **01** *SC* **1.4.x** *P* **4** *L* **29** # 570

Anslow, Pete — Ciena

Comment Type **TR** *Comment Status* **A**

The text following "1.4.x PHY-Initialization:" is not a definition of what the term PHY-Initialization means, it is a justification for not using auto-negotiation followed by a requirement on the time taken which is not appropriate for a definition - see IEEE style guide.

SuggestedRemedy

If a definition for "PHY-Initialization" is needed at all, replace the current text with a definition of what it means and add a cross-reference to the appropriate heading in Clause 96.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #132. The paragraph has been rewritten and the normative "shall" statement will be moved to Clause 96.

Cl **01** *SC* **1.5** *P* **18** *L* **35** # 136

Booth, Brad — Microsoft

Comment Type **ER** *Comment Status* **R**

No abbreviations are being used.

SuggestedRemedy

Delete 1.5.

Response *Response Status* **W**

REJECT.

There are new abbreviations used in 100BASE-T1. Will be updated in next draft version.

Cl **01** *SC* **1.5** *P* **18** *L* **39** # 40

Ran, Adee — Intel

Comment Type **E** *Comment Status* **A**

template text. no abbreviations to insert yet.

SuggestedRemedy

Delete subclause 1.5 and the template text.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #136

Cl **01** *SC* **1.5** *P* **19** *L* **1** # 62

Ran, Adee — Intel

Comment Type **ER** *Comment Status* **A**

Notes for editors should not be included in the published draft.

Changes between versions probably won't be maintained, and can be deleted.

SuggestedRemedy

Delete content of page 5 and page 6.

Response *Response Status* **W**

ACCEPT.

Similar comment in 118, see the proposed change for this text there.

Cl **01** *SC* **1.5** *P* **4** *L* **39** # 133

Grow, Robert — RMG Consulting

Comment Type **TR** *Comment Status* **A**

PDF page 18 - I doubt the expansion of ABBR is 'expanded version'.

SuggestedRemedy

Put in correct expansion.
Also delete the style reminder in line 41 or put into an Editor's Note.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Cl **01** *SC* **1.5** *P* **4** *L* **39** # 537

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **A**

The text:
"ABBR expanded version
[abbreviations use paragraph tag AcrList,ac]"
is spurious text from the 802.3 template and should be removed.

SuggestedRemedy

Delete:
"ABBR expanded version
[abbreviations use paragraph tag AcrList,ac]"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Similar comment in 136, see the proposed change for this text there.

Cl **01** *SC* **1.5** *P* **4** *L* **39** # 477

Mitsuru, Iwaoka — Yokogawa Electric Co

Comment Type **E** *Comment Status* **A**

A suprious definition of "ABBR".

SuggestedRemedy

Delete a definition of "ABBR".

Response *Response Status* **C**

ACCEPT.

Cl **01** *SC* **1.5** *P* **4** *L* **39** # 478

Mitsuru, Iwaoka — Yokogawa Electric Co

Comment Type **E** *Comment Status* **A**

It is better to define "DPI".

SuggestedRemedy

Insert a following new definition of "DPI".

DPI Direct Power Injection

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **01** *SC* **1.5** *P* **4** *L* **39** # 479

Mitsuru, Iwaoka — Yokogawa Electric Co

Comment Type **E** *Comment Status* **A**

It is better to define following abbrevations: "PSAACRF","PSANEXT","TCL" and "TCTL".
(Note; IEEE P802.3bp D1.10 defines these abbreviations. However, 802.3bw will be published before 802.3bp, it is better to define these abbrevations in 802.3bw.)

SuggestedRemedy

Insert following definitions:

PSAACRF power sum alien attenuation crosstalk ratio far-end
PSANEXT power sum alien near-end crosstalk
TCL transverse conversion loss
TCTL transverse conversion transmission loss

Response *Response Status* **C**

ACCEPT.

Cl **01** SC **1.5** P **5** L **1** # 538
Anslow, Pete Ciena

Comment Type **E** *Comment Status* **A**

The text on pages 5 and 6 of the draft is from the 802.3 template with helpful instructions for the editors. It starts with:
"Notes for editors (not to be included in the published draft)" and yet it is in the published draft!

SuggestedRemedy

Delete the text on pages 5 and 6 of the draft.

Response *Response Status* **C**

ACCEPT.

Similar comment in 118, see the proposed change for this text there.

Cl **1.4** SC P **4** L **18** # 379
Matola, Larry Delphi

Comment Type **E** *Comment Status* **R**

1.4.x Automotive Cabling: Balanced 100 ohm one pair cable and associated hardware having specified transmission characteristics are provided in 96.7.1.

UTP is not mentioned in Definition

SuggestedRemedy

1.4.x Automotive Cabling: Balanced 100 ohm one pair unshielded twisted pair(UTP) cable and associated hardware having specified transmission characteristics are provided in 96.7.1.

Response *Response Status* **C**

REJECT.

See response to comment #514.

Cl **1.4** SC **multiple** P **2-3** L # 378
Matola, Larry Delphi

Comment Type **E** *Comment Status* **A**

Some definitions are Bold text others not

SuggestedRemedy

Consistancy make all the same

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Similar comment in 524, see the proposed change for this text there.

Cl **1.4.1** SC P **17** L **2** # 512
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**

poor wording

SuggestedRemedy

Replace: ternary pairs named as ESD1-3 as defined in 96.3.2.3.

With: ternary pairs named ESD1-3 as defined in 96.3.2.3.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #140.

Cl **1.4.3** SC P **17** L **43** # 513
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**

poor wording

SuggestedRemedy

Replace: SSD consists of the code-group of 3 consecutive ternary pairs named as SSD1-3 as

With: SSD consists of the code-group of 3 consecutive ternary pairs named SSD1-3 as

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #24.

Cl **1.4.3** SC P **18** L **8** # 510
Wienckowski, Natalie General Motors

Comment Type **T** *Comment Status* **A**

incorrect baud rate

SuggestedRemedy

In: for 100BASE-T1, the symbol rate is 66.666 MBd

Add "bar" on top of the last 6 in 66.666.

Response *Response Status* **C**

ACCEPT.

Cl **1.4.x** *SC* *P* **18** *L* **22** # 515
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**
poor wording

SuggestedRemedy
Replace: 3 bits (3B) wide of data that is transmitted

With: 3 bit (3B) wide data that is transmitted

Response *Response Status* **C**
ACCEPT.

Use commentors suggested remedy.

Cl **1.4.x** *SC* *P* **18** *L* **22** # 511
Wienckowski, Natalie General Motors

Comment Type **T** *Comment Status* **A**
incorrect clock frequency

SuggestedRemedy
In: during one 33.333 MHz

Add "bar" on top of the last 3 in 33.333.

Response *Response Status* **C**
ACCEPT.

Use commentors suggested remedy.

Cl **1.4.x** *SC* *P* **18** *L* **30** # 516
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**
extraneous period

SuggestedRemedy
Replace: auto-negotiation. process

With: auto-negotiation process

Response *Response Status* **C**
ACCEPT.

Cl **30** *SC* *P* **8** *L* **3** # 114
Grow, Robert RMG Consulting

Comment Type **E** *Comment Status* **A**
PDF page 22 - Residual template instruction.

SuggestedRemedy
Remove editing instruction that isn't an editing instruction but rather instruction on how to create a draft.

Response *Response Status* **C**
ACCEPT.

Use commentors suggested remedy.

Cl **30** *SC* **30** *P* **8** *L* **3** # 539
Anslow, Pete Ciena

Comment Type **E** *Comment Status* **A**
The text immediately below the Clause 30 title is helpful text from the 802.3 template and should not have been included in the draft.
Same issue for Clause 45 on Page 10

SuggestedRemedy
Delete:
"[Insert the headings and changes to Clause 30 below. For any existing heading, figure, table or equation include the cross-reference marker from Clause 30 in the base standard (as has been done for the Clause 30 heading above).]"

Delete equivalent text in Clause 45.

Response *Response Status* **C**
ACCEPT.

Similar comment in 114, see the proposed change for this text there.

Cl **30** *SC* **30.3.2.1.2** *P* **22** *L* **10** # 174

Law, David HP

Comment Type **T** *Comment Status* **A**

To match other enumerations suggest that the description for 100BASE-T1 enumerations reads 'Clause 96 100 Mb/s PAM3' in both subclause 30.3.2.1.2 and 30.3.2.1.3.

SuggestedRemedy

Suggest that in both subclause 30.3.2.1.2 and 30.3.2.1.3, the text 'Clause 96 100 Mb/s Single-pair' be changed to read 'Clause 96 100 Mb/s PAM3'.

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.2.1.2** *P* **22** *L* **11** # 199

Remein, Duane Huawei Technologies

Comment Type **ER** *Comment Status* **A**

Avoid confusing "Change" with "Insert" - they tell the staff editors to do very different things

SuggestedRemedy

Review all edition instructions and assure correct wording and style is used.
Change - changes existing text using mark-up
Insert - adds new text to the clause and does not require mark-up, however, the editing instruction should be explicit regarding location of change (i.e., Insert the following after xyz).

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Similar comment in 63, additionally scrub the remainder of the draft for erroneous editing instructions.

Cl **30** *SC* **30.3.2.1.2** *P* **22** *L* **11** # 63

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

Instruction should be "Insert". Also applies in the following subclauses.

SuggestedRemedy

Change instructions to "insert after..." multiple times.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change
"Change entry in APPROPRIATE SYNTAX as follows:"
to
"Insert entry in APPROPRIATE SYNTAX as follows:"

Additionally remove underline from associated text. Repeat for instructions in 30.3.2.1.3 & 30.5.1.1.2.

Cl **30** *SC* **30.3.2.1.2** *P* **22** *L* **12** # 385

Hajduczenia, Marek Bright House Network

Comment Type **ER** *Comment Status* **A**

Editing instruction is incorrect: Change entry in APPROPRIATE SYNTAX as follows:. It is not clear what change is being made and where the entry is added.

SuggestedRemedy

Provide clear editorial instruction indicating clearly where the new entry is added: at the end, between some other items, etc. ? Same for 30.3.2.1.3, 30.5.1.1.2. Look at 802.3bm for proper instructions for such changes.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Similar comment in 63, additionally scrub the remainder of the draft for erroneous editing instructions.

Cl **30** *SC* **30.3.2.1.2** *P* **8** *L* **11** # 120
Grow, Robert RMG Consulting

Comment Type **ER** *Comment Status* **A**

PDF page 22 - This is not a change, it is an insert.

SuggestedRemedy

Editing instruction should be an insert with the insert point of the new line identified (e.g., Insert the following after xxxx). Check other approved amendments for lines they might have added to avoid ambiguity of insert point.
Similar correction on line 19, 30.3.2.1.3, and line 34, 30.5.1.1.2.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Similar comment in 63, additionally scrub the remainder of the draft for erroneous editing instructions.

Cl **30** *SC* **30.3.2.1.2** *P* **8** *L* **11** # 540
Anslow, Pete Ciena

Comment Type **E** *Comment Status* **A**

The editing instructions for 30.3.2.1.2, 30.3.2.1.3, and 30.5.1.1.2 are all "change", but to use this change instruction, at least some of the existing text of the changed section must be present.
An "Insert" editing instruction is more appropriate here.

SuggestedRemedy

For 30.3.2.1.2 make the editing instruction:
"Insert 100BASE-T1 PHY type into “APPROPRIATE SYNTAX” section of 30.3.2.1.2 after 100BASE-T2:" and remove the underline from the inserted text.

For 30.3.2.1.3 make the editing instruction:
"Insert 100BASE-T1 PHY type into “APPROPRIATE SYNTAX” section of 30.3.2.1.3 after 100BASE-T2:" and remove the underline from the inserted text.

For 30.5.1.1.2 make the editing instruction:
"Insert 100BASE-T1 MAU type into “APPROPRIATE SYNTAX” section of 30.5.1.1.2 after 100BASE-TXFD:" and remove the underline from the inserted text.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Similar comment in 63, additionally scrub the remainder of the draft for erroneous editing instructions.

Cl **30** *SC* **30.5.1.1.11** *P* **22** *L* **36** # 64
Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

Incorrect subclause number. Should be 30.5.1.1.4 to match title.

Also in line 38.

SuggestedRemedy

Change 11 to 4 twice.

Response *Response Status* **C**

ACCEPT.

Use commentors suggested resolution.

Cl **30** *SC* **30.5.1.1.11** *P* **22** *L* **38** # 305
Thompson, Geoff GraCaSI

Comment Type **ER** *Comment Status* **A**

Calls for insertion in 1st paragraph. First paragraph is limited to 10 Mb/s operation PHYs

SuggestedRemedy

Paragraph 3 looks like a better fit.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change
"Change the first paragraph in BEHAVIOUR DEFINED AS section of 30.5.1.1.11 as follows:"
to
"Insert into the third paragraph in BEHAVIOUR DEFINED AS section of 30.5.1.1.4 as follows:"

See comment 64 for changing "30.5.1.1.11" to "30.5.1.1.4"

Cl **30** *SC* **30.5.1.1.11** *P* **22** *L* **38** # 272

Thompson, Geoff GraCaSI

Comment Type **TR** *Comment Status* **A**

Doesn't cover all conditions of whether or not the media is available

SuggestedRemedy

Add definition for how this object should read when PHY is in FORCE or in TEST mode. Technical completion issue?)

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

The Link Monitor state diagram, Figure 96-16, will cover all states of the PHY, including FORCE and TEST mode.

Change: "For 100BASE-T1 PHYs the enumerations match the states within the link integrity state diagram Figure 96-16."
To
"For 100BASE-T1 PHYs the enumerations match the states within the link monitor state diagram Figure 96-16."

Cl **30** *SC* **30.5.1.1.11** *P* **22** *L* **39** # 400

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **A**

Wrong editorial instruction: Change the first paragraph in BEHAVIOUR DEFINED AS section of 30.5.1.1.11 as follows:

SuggestedRemedy

Likely, the intent is to add the statement at the end of the existing description, and not change the whole existing description to the shown text. Please clarify and fix the editorial instruction

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Similar comment in 63, additionally scrub the remainder of the draft for erroneous editing instructions.

Cl **30** *SC* **30.5.1.1.11** *P* **22** *L* **43** # 65

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

Missing cross-reference hotspot to figure 96-16.

Applies in multiple other places in the draft.

SuggestedRemedy

add xref, multiple places.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Draft will be scrubbed of missing cross-references.

Cl **30** *SC* **30.5.1.1.11** *P* **8** *L* **36** # 564

Anslow, Pete Ciena

Comment Type **T** *Comment Status* **A**

30.5.1.1.11 in either IEEE Std 802.3-2012 or in the P802.3bx revision draft D2.0 is:
aBIPErrorCount not aMediaAvailable
aMediaAvailable is 30.5.1.1.4.

Also, the editing instruction says "Change the first paragraph in BEHAVIOUR DEFINED AS section of 30.5.1.1.11 as follows:", but the first paragraph is:
"If the MAU is a 10M b/s link or fiber type (FOIRL, 10BASE-T, 10BASE-F), then this is equivalent to the link test fail state/low light function. For an AUI, 10BASE2, 10BASE5, or 10BROAD36 MAU, this indicates whether or not loopback is detected on the DI circuit. The value of this attribute persists between packets for MAU types AUI, 10BASE5, 10BASE2, 10BROAD36, and 10BASEFP."
which is all about 10 Mb/s, so is inappropriate.

The third paragraph is about 100 Mb/s, so this seems a better place to add the text.

SuggestedRemedy

Change the heading number to be: 30.5.1.1.4 aMediaAvailable
Change the editing instruction to:
Change the third paragraph in BEHAVIOUR DEFINED AS section of 30.5.1.1.4 as follows:
Show the existing third paragraph text in normal font and the added text in underline font. Make "Figure 96-6" a cross-reference.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remedy 1: See response to comment 64
Remedy 2: See response to comment 305
Remedy 3: See response to comment 65

Cl **30** *SC* **30.5.1.1.11** *P* **8** *L* **41** # 121

Grow, Robert — RMG Consulting

Comment Type **ER** *Comment Status* **A**

PDF page 22 - This is not shown as a change, it is more like an insert.

SuggestedRemedy

Either include the rest of the current text for BEHAVIOUR and leave as a change or write as an insert and clearly indicate the insert point. The former is preferred as it is not too long. In either case, check approved amendments to look for any text they might have added.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Similar comment in 305, see the proposed change for this text there.

Cl **30** *SC* **30.5.1.1.11** *P* **8** *L* **41** # 474

Mitsuru, Iwaoka — Yokogawa Electric Co

Comment Type **E** *Comment Status* **R**

A link integrity state diagram is not specified in the draft. Figure 96-16 is "Link Monitor State Diagram".
(Same issues exists in IEEE 802.3-2012. Similar comments are provided to the IEEE P802.3bx WG letter ballot.)

SuggestedRemedy

Replace "link integrity state diagram" by "link monitor state diagram".

Response *Response Status* **C**

REJECT.

The wording of "link integrity" complies with wording for 100BASE-TX.

Cl **30** *SC* **30.5.1.1.2** *P* **22** *L* **29** # 175

Law, David — HP

Comment Type **T** *Comment Status* **A**

To match other enumerations that only support full-duplex (for example 10GBASE-LX4) suggest that the description for 100BASE-T1 enumerations reads 'One-pair twisted-pair balanced copper cabling PHY as specified in Clause 96'.

SuggestedRemedy

Suggest that the text 'Single-pair as specified in Clause 96, full duplex mode' be changed to read 'One-pair twisted-pair balanced copper cabling PHY as specified in Clause 96'.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **39** *SC* **96.3** *P* **39** *L* **1** # 360

D'Ambrosia, John — Dell

Comment Type **ER** *Comment Status* **A**

colored diagrams? Not aware off top of head of any others. Fig 96-3

SuggestedRemedy

Consult styld guide

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Similar comment in 563, see the proposed change for this text there.

Cl **45** *SC* **2.1.2001** *P* **12** *L* **29** # 160

Brandt, David — Rockwell Automation

Comment Type **E** *Comment Status* **A**

"Configure" spelled wrong.

SuggestedRemedy

Spell correctly.

Response *Response Status* **C**

ACCEPT.

Change
"Configre"
to
"Configure"

Cl **45** *SC* **45.2.1** *P* **10** *L* **17** # 542

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **A**

The register names shown in Table 45-3 do not match the register names used later in the draft. Table 45-3 has:
100BASE-T1 control
100BASE-T1 status
100BASE-T1 test mode

The subclauses that define them have:
100BASE-T1 PMA/PMD control
100BASE-T1 PMA/PMD status
100BASE-T1 PMA/PMD test control

SuggestedRemedy

Use the same name for each register in Table 45-3 as is used in the definition of the register contents.

Response *Response Status* **C**

ACCEPT.

Change Register Names in Table 45-3 to
100BASE-T1 PMA/PMD control
100BASE-T1 PMA/PMD status
100BASE-T1 PMA/PMD test mode

Cl **45** *SC* **45.2.1** *P* **10** *L* **9** # 541

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **A** *CL45/22*

The editing instruction for Table 45-3 is changing an existing row and then inserting 4 new rows. This can't really be done with a change instruction.

SuggestedRemedy

Change the editing instruction to:
"Change the identified reserved row in Table 45-3 and insert four new rows immediately above the changed row as follows (unchanged rows not shown):"
Show the changed row as:
"1.18092103 through 1.32767 Reserved" with 1809 in strikethrough font and 2103 underlined.
Show the four inserted rows in normal font.
The four entries in the Subclause column should be cross-references and the middle one is incorrect.

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **45** *SC* **45.2.1** *P* **24** *L* **12** # 389

Hajduczenia, Marek — Bright House Network

Comment Type **T** *Comment Status* **X** *CL45/22*

Is there any specific reason why we need to chop register space into pieces for just three registers? Why not place them at 1.1810 through 1813 or if some separation is required, start from 1.1820 though 1823.

SuggestedRemedy

Change register assignment to 1.1810 through 1813 or if some separation is required, start from 1.1820 though 1823.

Proposed Response *Response Status* **W**

Cl **45** *SC* **45.2.1** *P* **24** *L* **16** # 66

Ran, Adee — Intel

Comment Type **ER** *Comment Status* **A**

Seems like incorrect subcluase numbers (inserted subclauses should have successive numbers or letters if they precede the first subclause).

Also, missing cross-references to these sucblauses (they don't have assocuated bookmarks).

SuggestedRemedy

renumebr subclauses if needed, add bookmarks and xrefs.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Current subclause numbers were chosen as temporary place holders and will be updated in next draft. Bookmarks and cross references to be added as needed.

Cl **45** *SC* **45.2.1.1** *P* **10** *L* **25** # 565

Anslow, Pete — Ciena

Comment Type **T** *Comment Status* **A** *CL45/22*

There does not seem to be any useful change made to Table 45-4. The only difference from the in-force version is that the entry "x 1 x x = Reserved" is missing.
The editing instruction "Change Table 45-4 as follows:" would require the whole table to be shown, not just one row.

SuggestedRemedy

If some change is required to these speed selection bits, change the editing instruction to: "Change the 1.0.5:2 row of Table 45-4 as follows:"
Show all changes from the existing row with strikethrough and underline font.
Also, change footnote a to: "R/W = Read/Write, SC = Self-clearing" as per the in-force table.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 67.

Cl **45** *SC* **45.2.1.1** *P* **24** *L* **24** # 67

Ran, Adee — Intel

Comment Type **ER** *Comment Status* **D** *CL45/22*

This is the control register, not the status register.

It is not clear what has changed in this register. The second "reserved" line was removed, but it does not appear in strikeout. Why was this change made?

SuggestedRemedy

If not change is made, remove the editing instruction (and this subclause).

Otherwise, show the change appropriately, and change "status" to "control" in the title.

Proposed Response *Response Status* **W**

Cl **45** *SC* **45.2.1.1** *P* **24** *L* **24** # 212

Remein, Duane — Huawei Technologies

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

No proposed change illustrated. Missing assignments for values 01xx

SuggestedRemedy

remove section

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See response to comment 67.

Cl **45** *SC* **45.2.1.1** *P* **24** *L* **29** # 390

Hajduczenia, Marek — Bright House Network

Comment Type **T** *Comment Status* **A**

There are no changes shown in Table 45–4 as far as I can tell.

SuggestedRemedy

Either show changes to 45.2.1.1 or remove this subclause altogheter.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 67.

Cl **45** *SC* **45.2.1.1** *P* **24** *L* **33** # 646

Marris, Arthur — Cadence Design Syst

Comment Type **T** *Comment Status* **A** *Late*

It is not clear what the change to "speed selection" in Table 45–4—PMA/PMD control 1 register bit definitions should be.

SuggestedRemedy

Please fix or delete any reference to this sub clause.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 67.

Cl **45** *SC* **45.2.1.1** *P* **24** *L* **35** # 142

Booth, Brad — Microsoft

Comment Type **TR** *Comment Status* **X** *CL45/22*

Missing information. x1xx = Reserved was removed but draft doesn't show what was added.

SuggestedRemedy

Add correct information and register bit definition.

Proposed Response *Response Status* **W**

Cl **45** *SC* **45.2.1.10** *P* **12** *L* **3** # 544

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **A** *CL45/22*

The editing instruction says: "Insert the following rows into Table 45-13 in place of the reserved row for bit 1.11.11:"

Firstly, there is no row for just 1.11.11, and secondly "Insert ... in place of ..." isn't an insert, it is a replace.

SuggestedRemedy

As it can't be done as a simple replacement, change the editing instruction to:
"Change the reserved row in Table 45-13 and insert a new row immediately below the changed row as follows (unchanged rows not shown):"
Show the changed row as:
"1.11.15:112 Reserved Ignore on read RO" with the last "1" in strikethrough font and the "2" underlined and the existing row underneath as currently.

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **45** *SC* **45.2.1.10** *P* **26** *L* **14** # 144

Booth, Brad — Microsoft

Comment Type **TR** *Comment Status* **X** *CL45/22*

Missing register bit definition.

SuggestedRemedy

Add register bit definition:
When read as a one, bit 1.11.11 indicates that the PMA/PMD is able to operate as a 100BASE-T1 PMA/PMD type. When read as a zero, bit 1.11.11 indicates that the PMA/PMD is not able to operate as a 100BASE-T1 PMA/PMD type.

Proposed Response *Response Status* **W**

Cl **45** *SC* **45.2.1.10** *P* **26** *L* **3** # 201

Remein, Duane — Huawei Technologies

Comment Type **ER** *Comment Status* **D** *CL45/22*

There is not current row for bit 1.11.11.
"Insert the following rows into Table 45-13 in place of the reserved row for bit 1.11.11"

SuggestedRemedy

Change editing instruction to read:
"Change the identified reserved row in Table 45–13 as follows:"
In Table 45-13 show:
1.11.15:121 | Reserved | Ignore on read | RO {with 1 in strike-out}
1.11.11 | 100BASE-T1 ability | 1 = PMA/PMD is able to perform 100BASE-T1
0 = PMA/PMD is not able to perform 100BASE-T1 | RO {in underline}

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Similar comment in 554, see the proposed change for this text there.

Cl **45** *SC* **45.2.1.10** *P* **26** *L* **6** # 386

Hajduczenia, Marek — Bright House Network

Comment Type **ER** *Comment Status* **X** *CL45/22*

Changes to Table 45–13 shouw show a row for registers 1.11.15:11, with 11 in strikethrough and 12 in underline and then show extra row with new content you propose, all content underlined as newly inserted.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2001** *P* **12** *L* **33** # 567

Anslow, Pete — Ciena

Comment Type **T** *Comment Status* **X** *CL45/22*

In Table 45-2001, bit 1.2100.15:
" 1 = Enable MASTER-SLAVE manual configuration
0 = Reserved for future use"
doesn't do anything. As defined, the only allowed value is 1.
45.2.1.2001.1 is consistent with this as it says what happens if this bit is set to 1, but does not say what happens if it is zero.

If the intention is to use this bit for some extra feature in the future, then this can be done by simply marking the bit as Reserved for future use. Existing implementations will return "0" for this bit, so 0 can be assigned to the current behaviour in the future and "1" assigned to the new behaviour.

Same issue for bits 1.2100.3:0 0000 is the only valid response and that is the default anyway.

Also, "0 0 0 x = Reserved for future use" should be "0 0 1 x = Reserved for future use" and "0 0 0 1 = Reserved for future use" is also needed.

Also, footnotes a and b should be a single footnote:
"RO = Read only, R/W = Read/Write"

SuggestedRemedy

Either expand the definitions of bits 1.2100.15 and 1.2100.3:0 to include more than one possibility or mark these bits as "Reserved for future use"
Fix the other issues if choosing the first option.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2001** *P* **26** *L* **17** # 402

Hajduczenia, Marek — Bright House Network

Comment Type **E** *Comment Status* **X** *CL45/22*

45.2.1.2001 is not really a correct number. Looking at the recent drafts, I believe the correct number is 45.2.1.107 onwards - no other project is adding at this time anything to the end of 45.2.1.xxx.

SuggestedRemedy

Fix numbers for subclauses 45.2.1.2001, 45.2.1.2002, 45.2.1.2003

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2001** *P* **26** *L* **17** # 202

Remein, Duane — Huawei Technologies

Comment Type **ER** *Comment Status* **X** *CL45/22*

Para 45.2.1.2001 - 45.2.1.2003.1 and accompanying tables are incorrectly numbered. should have the number of the last para in the std with alpha appended. For example
45.2.1.2001 => 45.2.1.106a
Table 45–2001 => Table 45–78a

SuggestedRemedy

Renumber remaining para correctly.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2001** *P* **26** *L* **32** # 215

Remein, Duane — Huawei Technologies

Comment Type **T** *Comment Status* **X** *CL45/22*

enumeration for 1.2100.3:0. Is this bit 0, 1, 2 & 3 or 3, 2, 1 & 0?

SuggestedRemedy

Add key above enumeration

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2001** *P* **26** *L* **32** # 391

Hajduczenia, Marek — Bright House Network

Comment Type **T** *Comment Status* **X** *CL45/22*

Missing description for bits 1.2100.3:0

SuggestedRemedy

Please add a subclause with description of bits 1.2100.3:0

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2001** *P* **26** *L* **34** # 26

Ran, Adee Intel

Comment Type **TR** *Comment Status* **X** *CL45/22*

"0 0 1 x" and "0 0 0 1" are not defined.

SuggestedRemedy

Add them as "reserved".

Proposed Response *Response Status* **W**

Cl **45** *SC* **45.2.1.2001.1** *P* **12** *L* **40** # 545

Anslow, Pete Ciena

Comment Type **E** *Comment Status* **X** *CL45/22*

Headings in 45.2.1 that describe the functions of bits (level 5 headings) end with the bit designation in brackets.
The name in the heading should match the name given in the table as much as possible.

SuggestedRemedy

Add "(1.2100.15)" at the end of the heading for 45.2.1.2001.1 if retained.
Change the title of 45.2.1.2001.2 to:
"100BASE-T1 MASTER/SLAVE config value (1.2100.14)"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2001.1** *P* **12** *L* **41** # 583

Wu, Peter Marvell

Comment Type **TR** *Comment Status* **X** *CL45/22*

The name and description indicate this is a configuration bit, but the R/W column indicates RO (read only).

SuggestedRemedy

change RO to R/W.

Proposed Response *Response Status* **W**

Cl **45** *SC* **45.2.1.2001.1** *P* **26** *L* **40** # 203

Remein, Duane Huawei Technologies

Comment Type **ER** *Comment Status* **X** *CL45/22*

All Level 5 headers in Cl 45 should include the register bit designations in parens.
For example 45.2.1.2001.1 should read:
45.2.1.2001.1 100BASE-T1 MASTER-SLAVE manual config enable(1.2100.15)

SuggestedRemedy

Add register desig. to all Cl 45 L5 headers

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2001.1** *P* **26** *L* **42** # 403

Hajduczenia, Marek Bright House Network

Comment Type **E** *Comment Status* **X** *CL45/22*

Seems that two sentences were merged together: "Bit 1.2100.15 is set to one in order to indicate MASTER-SLAVE config value bit 1.2100.14 is used to deter
mine if the PMA/PMD operates as MASTER or SLAVE" - split them accordingly to make two sentences.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2001.2** *P* **12** *L* **45** # 610

Hidaka, Yasuo Fujitsu Laboratories of

Comment Type **E** *Comment Status* **X** *CL45/22*

Section title "100BASE-T1 MASTER/SLAVE Operation" is inconsistent with Table 45-2001.

SuggestedRemedy

Change the section title as follows:
100BASE-T1 MASTER-SLAVE config value

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2001.2** *P* **12** *L* **47** # 611

Hidaka, Yasuo — Fujitsu Laboratories of

Comment Type **E** *Comment Status* **D** *CL45/22*

The text is inconsistent with Table 45-2001.

SuggestedRemedy

Replace "manual config bit" with "manual config enable bit".

Proposed Response *Response Status* **W**

Cl **45** *SC* **45.2.1.2001.2** *P* **12** *L* **48** # 569

Anslow, Pete — Ciena

Comment Type **T** *Comment Status* **D** *CL45/22*

It is customary to add a PICS item to match each subclause containing "shall". This applies to 45.2.1.2001.2 and 45.2.1.2002.1

SuggestedRemedy

Add PICS items corresponding to the requirements of 45.2.1.2001.2 and 45.2.1.2002.1

Proposed Response *Response Status* **W**

Cl **45** *SC* **45.2.1.2002** *P* **13** *L* **10** # 546

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **X** *CL45/22*

Table 45-2002 defines bit 1.2101.2, but ignores all of the other bits in the register. Same issue in Table 45-2003.

Also, footnotes a and b should be a single footnote:
"RO = Read only, LL = Latching low"

SuggestedRemedy

Define the remaining bits in Tables 45-2002 and 45-2003 as "Reserved for future use".
Make footnotes a and b a single footnote:
"RO = Read only, LL = Latching low"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2002** *P* **27** *L* **1** # 216

Remein, Duane — Huawei Technologies

Comment Type **T** *Comment Status* **X** *CL45/22*

Ln 20 states that "This bit is identical to bit 1.1.2, when operating mode is set to 100BASE-T1." However there appears to be no difference in the definition of this bit, applicable only to 100BASE-T1 PMA/PMDs and bit 1.1.2 which is applicable to 100BASE-T1 PMA/PMDs and all others.
Which makes me question the need for a bit duplicating a minor function of and existing bit.

SuggestedRemedy

Strike this bit.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2002** *P* **27** *L* **10** # 250

Remein, Duane — Huawei Technologies

Comment Type **TR** *Comment Status* **X** *CL45/22*

Table 45–2002 must assign ALL bits in the register not just those your have a particular interest in.
Same problem exists in Table 45-2003

SuggestedRemedy

Add definition for all reserved bits.

Proposed Response *Response Status* **W**

Cl **45** *SC* **45.2.1.2002** *P* **27** *L* **8** # 392

Hajduczenia, Marek — Bright House Network

Comment Type **T** *Comment Status* **A** *CL45/22*

Table 45–2002 does not show all other bits in this register as reserved. Please add the neccessary markup.

SuggestedRemedy

Per comment

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.2002.1** *P* **13** *L* **20** # 568

Anslow, Pete — Ciena

Comment Type **T** *Comment Status* **X** *CL45/22*

This says: "This bit is identical to bit 1.1.2, when operating mode is set to 100BASE-T1."
Firstly, it is unclear what the "operating mode" means. Does it mean if bits 1.7.5:0 are set to the value chosen for 100BASE-T1?
Secondly, if this bit is identical to bit 1.1.2, what is the point of defining it?

SuggestedRemedy

For this definition to be useful, the bit needs to do something other than being identical to bit 1.1.2. Either say what this is or remove the register.
In the former case, also clarify what "operating mode" means

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2002.2** *P* **13** *L* **23** # 547

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **X** *CL45/22*

Registers are defined using level 4 headings, bits are defined using level 5 as here. The implication of this heading numbering is that register 1.2102 is part of register 2010.

SuggestedRemedy

Change the heading number to 45.2.1.2003
For some reason the next level 5 heading is already 45.2.1.2003.1 which it shouldn't be as it should not have forced numbering.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.2002.2** *P* **27** *L* **23** # 204

Remein, Duane — Huawei Technologies

Comment Type **ER** *Comment Status* **A** *CL45/22*

Should be L4 header not L5

SuggestedRemedy

Change to L4 header,

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Cl **45** *SC* **45.2.1.2002.2** *P* **27** *L* **33** # 268

Thompson, Geoff — GraCaSI

Comment Type **E** *Comment Status* **A** *CL45/22*

Number of modes doesn' match TM def'ns in Table 96-4

SuggestedRemedy

Change rows in Table 96-4 to read: Test mode 6/7 Reserved for future standards use"," operations not yet defined."

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.6** *P* **10** *L* **44** # 566

Anslow, Pete — Ciena

Comment Type **T** *Comment Status* **X** *CL45/22*

The proposed change made to Table 45-7 re-uses bit combinations that have already been allocated by IEEE Std 802.3bk-2013:
0 1 1 1 1 1 = 10/1GBASE-PRX-U4
0 1 1 1 1 0 = 10GBASE-PR-U4
0 1 1 1 0 1 = 10/1GBASE-PRX-D4
0 1 1 1 0 0 = 10GBASE-PR-D4

The editing instruction "Change Table 45-7 as follows:" would require the whole table to be shown, not just one row.
The proposed change does not show the existing text in this row of the table.

SuggestedRemedy

Start with the row for bits 1.7.5:0 in the revision project draft and show changes with respect to that.
Either show the whole of Table 45-7 or modify the editing instruction as per another comment regarding Table 45-4.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.6** *P* **24** *L* **52** # 143

Booth, Brad — Microsoft

Comment Type **TR** *Comment Status* **X** *CL45/22*

This edit only shows a small portion of the table and doesn't give reference to its placement relative to the other ports.

Also missing the bit definition.

SuggestedRemedy

Show the full listing so one can visually understand its placement relative to the other port names.

Add the register bit definition.

Proposed Response *Response Status* **W**

Cl **45** *SC* **45.2.1.6** *P* **24** *L* **53** # 25

Ran, Adee — Intel

Comment Type **TR** *Comment Status* **X** *CL45/22*

The value "0 1 1 1 0 0" is taken by 10GBASE-PR-D4 (as of the published 802.3bj).

SuggestedRemedy

Choose an avaialble encoding for 100BASE-T1.

Proposed Response *Response Status* **W**

Cl **45** *SC* **45.2.1.6** *P* **24** *L* **53** # 247

Remein, Duane — Huawei Technologies

Comment Type **TR** *Comment Status* **X** *CL45/22*

In Table 45-7 the value 0 1 1 1 0 0 is already used for 10GBASE-PR-D4

SuggestedRemedy

Coordinate with WG Secretary and other TF editors to avoid overlap is selection of an appropriate value and change accordingly.

Proposed Response *Response Status* **W**

Cl **45** *SC* **45.2.1.7.4** *P* **11** *L* **6** # 543

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **X** *CL45/22*

The editing instruction "Insert the following row into Table 45-9:" needs to say where the insertion should be made.
The entry in the "Description location" column should be a cross-reference

Same issues for 45.2.1.7.5

SuggestedRemedy

Change the editing instruction to:
"Insert the following row above the row for 10GBASE-KR in Table 45-9 (unchanged rows not shown):"

In 45.2.1.7.5, change the editing instruction to:
"Insert the following row above the row for 10GBASE-KR in Table 45-10 (unchanged rows not shown):"

In both cases make the entry in the "Description location" column a cross-reference.

Proposed Response *Response Status* **W**

Cl **45** *SC* **45.2.1.7.4** *P* **25** *L* **1** # 401

Hajduczenia, Marek — Bright House Network

Comment Type **E** *Comment Status* **X** *CL45/22*

Editing instructions in 45.2.1.7.4 and 45.2.1.7.5 do not indicate where the new content is inderted - at the end of the table, beginning of the table, somewhere in between existing items?

SuggestedRemedy

Clarify the editorial instructions in both subclauses.

Proposed Response *Response Status* **O**

Cl **45** *SC* **Table 45-2003** *P* **26** *L* **28** # 367
Lusted, Kent Intel

Comment Type **E** *Comment Status* **X** *CL45/22*

Table 45-2003 lists the bit definitions for normal operation plus test modes 1-7. However, Table 96-4 only defines normal operation and test modes 1-5.

SuggestedRemedy

Change Table 45-2003 entries for test modes 6-7 to align with Table 96-4

Proposed Response *Response Status* **O**

Cl **45** *SC* **Table 45-2003** *P* **26** *L* **29** # 366
Lusted, Kent Intel

Comment Type **E** *Comment Status* **A** *CL45/22*

typo in "configre PHY as SLAVE"

SuggestedRemedy

change configre to configure

Response *Response Status* **C**

ACCEPT.

Similar to comment 160, see the proposed change for this text there.

Cl **45.2.** *SC* *P* **26** *L* **42** # 518
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X** *CL45/22*

run-on sentence

SuggestedRemedy

Replace: indicate MASTER-SLAVE config value bit 1.2100.14 is used

With: indicate MASTER-SLAVE config value. Bit 1.2100.14 is used

Proposed Response *Response Status* **O**

Cl **45.2.** *SC* **Table 45-4** *P* **24** *L* **34** # 517
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X** *CL45/22*

Should 100 Mb/s be added to this table? The x1xx = Reserved row was removed, but a new row was not added.

SuggestedRemedy

Add row:

0100 = 100 Mb/s

Proposed Response *Response Status* **O**

Cl **96** *SC* *P* *L* # 123
Grow, Robert RMG Consulting

Comment Type **ER** *Comment Status* **A**

I tried to indicate figures with specific problem in this clause.

It isn't clear what function color plays in clause 96 figures, especially for red and black text on transition lines of some of the figures. The style manual requires that color not be required to interpret figures.

Additionally font size in many of the figures appears to be much smaller than 12 point, has the figure been shrunk to fit thus decreasing displayed font size? This also happens with imported figures. Some (e.g., 96-17) appear to have been copied from some other drawing program or as bit maps. This is a maintenance headache. It is much better for all figures to be drawn in FrameMaker. Import also is a problem for import of bad style conventions (Figure 96-23 labels a resistor 500O, has a footnote that does not follow IEEE style).

There is no need to include product names (Figures 96-15, 96-23). BroadR-Reach is a registered trademark and should not appear in an 802.3 standard.

SuggestedRemedy

Replace all (or almost all) imported figures with drawings made in FrameMaker. In redrawing correct the problems noted in comment.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #553.

Cl **96** SC P L # 184

Remein, Duane — Huawei Technologies

Comment Type **E** *Comment Status* **A**

It is confusing to start a sentence with a lower case variable name:
"receiver). loc_rcvr_status is generated"

SuggestedRemedy

Change to:
"receiver). The loc_rcvr_status variable is generated"

Response *Response Status* **C**

ACCEPT.

Cl **96** SC P L # 122

Grow, Robert — RMG Consulting

Comment Type **ER** *Comment Status* **A**

Many tables have a format problem. Most notable is row height cutting off text (Tables 96-4 96-5, 96-6, and unnumbered table in 96.5.4.5 and 96.5.5.2).

SuggestedRemedy

Assure all tables follow IEEE style for table heading, footnotes, and properly display all table text.

Response *Response Status* **W**

ACCEPT.

All tables in Draft will be scrubbed to follow correct IEEE style.

Cl **96** SC P **12** L **54** # 419

Tazebay, Mehmet — Broadcom

Comment Type **E** *Comment Status* **A**

"TXMODE" needs to be replaced with "tx_mode" in order to stay consistent.
1.In Contents, (page 12, line 54) and (page 13, line 1, 4 and 5)
2.In 96.3.2.2.2 (page 41, line 29, 44, 47, 51)
3.In 96.3.2.4.6 (page 48, line 7, 34, 38) and (page 49, line 3, 17, 37, 40)

SuggestedRemedy

Change "TXMODE" to "tx_mode".

Response *Response Status* **C**

ACCEPT.

Cl **96** SC P **13** L **17** # 454

Tazebay, Mehmet — Broadcom

Comment Type **E** *Comment Status* **A**

In Contents (page 13 line 17), replace "Media" with "Medium" because Physical Medium Attachment is proper terminology in 803.2. The same also in 96.1 (page 29 line 12,13) and 96.4 (page 55 line 42).

SuggestedRemedy

Change "Physical Media Attachment" to "Physical Medium Attachment" everywhere that is being used.

Response *Response Status* **C**

ACCEPT.

Cl **96** SC P **17** L **3** # 423

Tazebay, Mehmet — Broadcom

Comment Type **E** *Comment Status* **A**

Missing underline for "and Clause 96" in the following locations:
1. In 1.4.183 (page 17, line 3)
2. In 1.4.381 (page 18, line 3)
3. In 1.4.x name (page 18, line 16)

SuggestedRemedy

Underline the text for these locations.

Response *Response Status* **C**

ACCEPT.

Cl **96** SC P **29** L **1** # 359

D'Ambrosia, John — Dell

Comment Type **ER** *Comment Status* **R**

Clause 96 appears to contain everything related to the PHY (outside of management). Therefore, there is no reason to do a clause correlation diagram such as Table 80-2. However, such a table is very useful to help the reader quickly understand what things are Mandatory or optional.

SuggestedRemedy

add a table similar in nature to 80-2 that looks at the various layers / key sections and states what is optional, mandatory, or applicable.

Response *Response Status* **W**

REJECT.

A table similar to 80-2 does not apply to Clause 96. In this ammendment, such a table would only contain one entry.

Cl **96** *SC* *P* **29** *L* **1** # 364

D'Ambrosia, John Dell

Comment Type **TR** *Comment Status* **A**

The objectives state -
The resulting standard will not preclude single pair auto-negotiation.\

Yet there are no statements at all in the document

Given that there are two variants of xBASE-T1 being created within 802.3 at this time, it is envisioned that subsystems could be updated in the future from one speeed to another. Only two inferences to autno-negotiation are made -

P18, Line 30, as part of a definition.
P32 Line 11 - see text
c) The 100BASE-T1 PHY does not use auto-negotiation due to associated latency that does not meet start-up time requirements of automotive networks. The 100BASE-T1 PHY MASTER-SLAVE relationship is set by FORCE mode.

It appears that auto-negotiation is not being addressed, but then a limit is placed on it. Further, what stops someone from adding an AN scheme that would not meet the latnecy requirements?

Left undefined, this is going to create interoperability concerns.

SuggestedRemedy

specific text needs to be added to address auto-negotiation.
suggest that text includes a SHALL statement that places a latency restriction on AN schemes in order to meet the start-up time requirements of automotive networks.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Auto-Negotiation objective will be removed from the draft.

Cl **96** *SC* **1.2** *P* **15** *L* **50** # 161

Brandt, David Rockwell Automation

Comment Type **E** *Comment Status* **A**

We are not supposed to refer to cost.

SuggestedRemedy

Replace:
"allow for lower cost (often lower quality) cabling"
With:
"allow for lower quality cabling"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #218.

Cl **96** *SC* **1.2.3** *P* **16** *L* **17** # 162

Brandt, David Rockwell Automation

Comment Type **E** *Comment Status* **A**

Extra underscores left in text. Should refer to singular wire pair.

SuggestedRemedy

Replace:
"over _each wire pair_"
With:
"over a one twisted pair channel"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #514.

Cl **96** *SC* **1.2.3** *P* **16** *L* **17** # 164

Brandt, David Rockwell Automation

Comment Type **E** *Comment Status* **A**

Typo, missing colon.

SuggestedRemedy

Replace:
"including"
With:
"including:"

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **1.2.3** *P* **16** *L* **23** # 163

Brandt, David — Rockwell Automation

Comment Type **E** *Comment Status* **A**

Multiple typos.

SuggestedRemedy

Replace:
"Start-of_stream delimiter (SSD), End-of-Stream (ESD)"
With:
"Start-of-Stream Delimiter (SSD), End-of-Stream Delimiter (ESD)"

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **1.3** *P* **16** *L* **3** # 456

Tazebay, Mehmet — Broadcom

Comment Type **T** *Comment Status* **A**

The reference for CISPR 25 is missing.

SuggestedRemedy

Insert the following reference for CISPR 25
"IEC CISPR 25 Edition 3.0 2008-03 : Vehicles, boats and internal combustion engines - Radio disturbance characteristics - Limits and methods of measurement for the protection of on-board receivers".

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **1.4** *P* **16** *L* **23** # 420

Tazebay, Mehmet — Broadcom

Comment Type **E** *Comment Status* **A**

The term "PAM3" is redundant in "A set of ternary PAM3 symbols ..." and it is better to delete it.

SuggestedRemedy

Change "For 100BASE-T1. A set of ternary PAM3 symbols ..." to "For 100BASE-T1, a set of ternary symbols ...".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change "For 100BASE-T1, A set of ternary PAM3 symbols ..." to "For 100BASE-T1, a set of ternary symbols ...".

Cl **96** *SC* **1.4.163** *P* **16** *L* **44** # 457

Tazebay, Mehmet — Broadcom

Comment Type **T** *Comment Status* **A**

There is a typo in the text "two Start-of-Stream delimiter code-groups which should be three.

SuggestedRemedy

Change "This mode begins with transmission of two Start-of-Stream delimiter code-groups followed by" to "This mode begins with transmission of three Start-of-Stream delimiter code-groups followed by".

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **1.4.183** *P* **17** *L* **1** # 425

Tazebay, Mehmet — Broadcom

Comment Type **E** *Comment Status* **A**

Missing "s" in the word "code-group" as it should be plural.

SuggestedRemedy

Change "... ESD consists of the code-group of 3 consecutive" to "ESD consists of the code-groups of 3 consecutive".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #140.

Cl **96** *SC* **1.4.377** *P* **17** *L* **38** # 445

Tazebay, Mehmet — Broadcom

Comment Type **E** *Comment Status* **A**

There is an additional "sosb" which does not belong to the sentence.

SuggestedRemedy

Remove "sosb"

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **1.4.381** *P* **18** *L* **2** # 424

Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

The symbol rate has a 15 nanoseconds for the line code and the code group (2 PAM3 symbols) have thirty seconds.

SuggestedRemedy

Change "In 100BASE-T1 this is equivalent to thirty nanoseconds." to "In 100BASE-T1, this is equivalent to fifteen nanoseconds with a code group of thirty nanoseconds.".

Response *Response Status* **C**

ACCEPT.

Use the commentors suggested remedy.

Cl **96** *SC* **1.4.382** *P* **18** *L* **8** # 422

Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

The 66.666 MHz needs to have iteration bar on top of the last digit in the following locations:
1. In 1.4.382 (page 18, line 8)
2. In 96.1.2.2 (page 30, line 11)

SuggestedRemedy

Insert "the iteration bar" to the last digit of 66.666 MHz.

Response *Response Status* **C**

ACCEPT.

See response to comment #510.

Cl **96** *SC* **1.4.x** *P* **18** *L* **19** # 426

Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

There is an additional "are" in the sentence "... having specified transmission characteristics are provided in 96.7.1"

SuggestedRemedy

Change "... having specified
transmission characteristics are provided in 96.7.1" to "having specified transmission characteristics provided in 96.7.1

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **1.4.x** *P* **18** *L* **21** # 427

Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

The statement "... the data encoding technique used by the PHY when converting MII data (4B-4 bits) with 25 MHz clock to 3 bits (3B) wide of data that is transmitted during one 33.333 MHz clock period" can be improved in order to provide clarity.

SuggestedRemedy

Change "... the data encoding technique used by the PHY when converting MII data (4B-4 bits) with 25 MHz clock to 3 bits (3B) wide of data that is transmitted during one 33.333 MHz clock period. (See 96.3.2.2.2)" to
"... the data encoding technique used by the PHY when converting 4 bits (4B) MII data at 25MHz clock to 3 bits (3B) data that is transmitted during one 33.333 MHz clock period. (See 96.3.2.2.2)".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change
"... the data encoding technique used by the PHY when converting MII data (4B-4 bits) with 25 MHz clock to 3 bits (3B) wide of data that is transmitted during one 33.333 MHz clock period"
to
"... the data encoding technique used by the PHY when converting 4 bits (4b) MII data at 25MHz clock to 3 bits (3b) data that is transmitted during one 33.333 MHz clock period. (See 96.3.2.2.2)"

Cl **96** *SC* **1.4.x** *P* **18** *L* **25** # 448

Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

1D-PAM3 is not used. Therefore, it should be removed.

SuggestedRemedy

Remove "1.4.x 1D-PAM3: The symbol encoding method used in the 100BASE-T1 PHY is 1D-PAM3. The one dimensional ternary (1D) code groups from PCS Transmit (See Clause 96.3.2) are transmitted using three voltage signal levels (PAM3). One symbol is transmitted in each symbol period." from lines 25 to 27 on Page 18.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **1.4.x** *P* **18** *L* **31** # 434
Tazebay, Mehmet Broadcom

Comment Type **T** *Comment Status* **A**

There is a need for clarification how the Master and Slave assignment is done.

SuggestedRemedy

Insert "set by Force mode" after ".. is used for MASTER and SLAVE assignment"

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **1.4x** *P* **18** *L* **22** # 421
Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

The "33.333 MHz" nees to have the iteration bar on top of the last digit.

SuggestedRemedy

Insert "the iteration bar" to the last digit of 33.333 MHz.

Response *Response Status* **C**

ACCEPT.

See response to comment 511.

Cl **96** *SC* **45.2.1** *P* **24** *L* **18** # 452
Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

The reference "45.2.1.2001" should be "45.2.1.2002".

SuggestedRemedy

Change "45.2.1.2001" to "45.2.1.2002".

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **45.2.1.2001** *P* **26** *L* **30** # 444
Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

There is a typo in "Configre PHY as SLAVE"

SuggestedRemedy

Change "Configre PHY as SLAVE" to "Configure PHY as SLAVE"

Response *Response Status* **C**

ACCEPT.

See response to comment 160.

Cl **96** *SC* **96** *P* **15** *L* **1** # 548
Anslow, Pete Ciena

Comment Type **E** *Comment Status* **A**

Clause 96 contains some characters in underline font and others in strikethrough font.
This is not appropriate for a new clause.
Example are at:
Page 18, line 35
Page 18, line 37 (looks like a space in strikethrough font)
Page 24, line 34
Page 26, lines 40 and 42
etc.

SuggestedRemedy

Search for these attributes in FrameMaker and remove them throughout Clause 96.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The draft will be scrubbed of erroneous underlines and strikethroughs, including the instances listed by the commentor.

Cl **96** *SC* **96** *P* **24** *L* **32** # 555

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **A**

Clause 96 of the draft is not consistent in its use of fonts.

SuggestedRemedy

Change all normal text in Clause 96 to use Paragraph Tag T,Text with 10 pt Times New Roman font.

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96** *P* **29** *L* **0** # 311

Thompson, Geoff — GraCaSI

Comment Type **ER** *Comment Status* **R**

Per page draft number shows as 1.1 in this clause

SuggestedRemedy

Have all pages of the draft show the same and the correct draft number.

Response *Response Status* **W**

REJECT.

Could not find conflicting draft numbering. All instances of draft version numbering should be D1.2.

Cl **96** *SC* **96** *P* **29** *L* **1** # 363

D'Ambrosia, John — Dell

Comment Type **TR** *Comment Status* **A**

No subclauses related to Reconciliation Sublayer and MII are provided at all. The MII specification is called out in 96.2 - this makes it more difficult to find. the supporting statement for MII i found is not normative.

SuggestedRemedy

Create clauses addressing these topics. Copy and modify appropriate text from 21.1.1

The 100BASE-T1 PHY SHALL use the Media Independent Interface (MII) as specified in Clause 22.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Text will be created.

Cl **96** *SC* **96** *P* **29** *L* **20** # 563

Anslow, Pete — Ciena

Comment Type **ER** *Comment Status* **A**

The IEEE Style Manual says that the font size in Figures should be at least 8 pt.
Several diagrams in Clause 96 have font sizes that are very much smaller than this.

SuggestedRemedy

Re-draw figures with font sizes smaller than 8 pt.
This is particularly needed for Figures 96-6, and 96-9

Response *Response Status* **W**

ACCEPT.

All figures are to be redrawn and follow the IEEE Style Manual rules.

Cl **96** *SC* **96** *P* **34** *L* **18** # 557

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **A**

The tables in Clause 96 do not use the correct format

SuggestedRemedy

Change the format of all tables to be the "IEEE" format available in the 802.3 template including the use of the default font (9 pt Times New Roman)

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.1** *P* **17** *L* **1** # 319

Zimmerman, George — CME Consulting, Inc.

Comment Type **E** *Comment Status* **A**

Figure 96-1 (and 96-2, 96-3, 96-4, 96-12, 96-13, 96-14) - intent of the coloring of some names red and blocks filled is unclear.

SuggestedRemedy

Note purpose of color schemes or remove coloring to be consistent with other IEEE 802 standards.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #553.

Cl **96** *SC* **96.1** *P* **29** *L* **1** # 145

Booth, Brad — Microsoft

Comment Type **TR** *Comment Status* **R**

This draft should be sent back to task force ballot as the format of the draft does not comply with the IEEE style guidelines. While there are no TBDs in the draft, the draft is missing information in Clause 45 and is not of the quality the working group normally sees when a draft enters working group ballot.

SuggestedRemedy

The task force needs to bring this draft up to the quality that should normally be seen by the working group at this phase of the project.

Response *Response Status* **W**

REJECT.

The suggested remedy does not provide specific suggestions on what changes or improvements must be made.

Cl **96** *SC* **96.1** *P* **29** *L* **1** # 358

D'Ambrosia, John — Dell

Comment Type **ER** *Comment Status* **A**

the document does not contain a Architectural Positioning Diagram. Other 100BASE-T documents include. See Fig 21-1.

SuggestedRemedy

Create an architectural positioning diagram. Refer to Figure 21-1.

Response *Response Status* **W**

ACCEPT.

Architectural positioning diagram will be created for next draft release.

Cl **96** *SC* **96.1** *P* **29** *L* **5** # 183

Remein, Duane — Huawei Technologies

Comment Type **E** *Comment Status* **R**

In most recent clauses a table is included that maps PHY variables to MDIO registers (see Tables 82–6, 83-2, 84-2, 84-3, 85-2, 85-3 and others for examples).

SuggestedRemedy

Include a PHY variable to mdio register mapping table.

Response *Response Status* **C**

REJECT.

A table similar to 82-6, etc. does not apply to Clause 96.

Cl **96** *SC* **96.1** *P* **29** *L* **7** # 41

Ran, Adee — Intel

Comment Type **E** *Comment Status* **R**

100 Mb/s appears repeatedly.

Redundant "type" and unabbreviated sublayer names which are well known.

Both "PHY" and "Physical layer" - double definition.

SuggestedRemedy

Change

"This clause defines the 100BASE-T1 PHY type, operating at 100 Mb/s, Physical Coding Sublayer and type Physical Media Attachment sublayer"

to

"This clause defines the type 100BASE-T1 PCS and type 100BASE-T1 PMA sublayers".

Response *Response Status* **C**

REJECT.

100BASE-T1 type must be defined in this clause. PHY is defined in 1.5, page 47.

Cl **96** *SC* **96.1** *P* **29** *L* **9** # 269

Thompson, Geoff — GraCaSI

Comment Type **E** *Comment Status* **A**

Incomplete in description and grammar.

SuggestedRemedy

Change sentence to read: It is suitable for a variety of applications"," each copper port supports a single twisted pair link segment connection up to 15 meters in length."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add comma

See Comment #514

Cl **96** *SC* **96.1** *P* **29** *L* **9** # 306

Thompson, Geoff GraCaSI

Comment Type **ER** *Comment Status* **A**

Line" is not a defined term in 802.3

SuggestedRemedy

Replace "line" with "link segment".

Response *Response Status* **W**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.1** *P* **31** *L* **1** # 270

Thompson, Geoff GraCaSI

Comment Type **E** *Comment Status* **A**

Regarding Figure 95-1. The figure is placed incorrectly in the text. It should be no more than 1 page away from the referring text. In this case the referring text is on page 29, line 15. The figure starts on page 31, line 1.

SuggestedRemedy

Move the figure forward.

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.1** *P* **31** *L* **1** # 310

Thompson, Geoff GraCaSI

Comment Type **ER** *Comment Status* **A**

Figure doesn't match 802.3 style and uses color without a key for what the colors mean.

SuggestedRemedy

Redraw the figure before the draft goes to Sponsor Ballot. The new figure should have boxes with corners and all of the text should be black. There is no need to color the boxes unless there is a meaning attributed to the colorization. If there is mean

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment 319.

Cl **96** *SC* **96.1.1** *P* **15** *L* **20** # 634

Hidaka, Yasuo Fujitsu Laboratories of

Comment Type **T** *Comment Status* **A**

An objective regarding for automotive environment is not included.

Therefore, I do not understand some technical choices, such as not to support auto negotiation.

I think the objective should refer to the automotive environment in the same way as the ojbective of this project.

SuggestedRemedy

Add an objective "Support 100Mb/s operation in automotive environment (e.g. EMC, temperature) over a single balanced twisted pair".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace existing objectives with 100BASE-T1 objectives.

Cl **96** *SC* **96.1.1** *P* **15** *L* **24** # 549

Anslow, Pete Ciena

Comment Type **E** *Comment Status* **A**

In "Provide a Bit Error Ratio of less than or equal to 1e-10 over..."
The IEEE style is not to capitalise Bit Error Ratio and to use the form 10-10 with the "-10" as a superscript and the "-" as an en dash (Ctrl-q Shft-p)

SuggestedRemedy

Change:
"Provide a Bit Error Ratio of less than or equal to 1e-10 over..." to:
"Provide a bit error ratio of less than or equal to 10-10 over..." with the "-10" as a superscript and the "-" as an en dash (Ctrl-q Shft-p)

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.1.1** *P* **29** *L* **16** # 356

D'Ambrosia, John — Dell

Comment Type **ER** *Comment Status* **R**

The "Objectives" sub-clause should be removed. It is relevant to the 802.3bw project, but becomes dated once put into the 802.3 standard, especially if any new projects modify this text.

SuggestedRemedy

Delete 96.1.1

Response *Response Status* **W**

REJECT.

96.1.1 will be updated with all of the 802.3bw objectives.

Cl **96** *SC* **96.1.1** *P* **29** *L* **19** # 42

Ran, Adee — Intel

Comment Type **E** *Comment Status* **A**

This is not the full set of objectives.

Also, in objective a (as listed here), "or better" does not appear in the task force objectives. There are no class or reach listed here, so better than what?

SuggestedRemedy

Bring in the full and correct objectives list, or alternatively remove this subclause.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **96** *SC* **96.1.1** *P* **29** *L* **20** # 368

Lusted, Kent — Intel

Comment Type **E** *Comment Status* **A**

font of items in alphabetic list are different from the rest of the text.

SuggestedRemedy

Response *Response Status* **C**

ACCEPT.

Font of text throughout document will be reviewed to changed to the accepted IEEE style.

Cl **96** *SC* **96.1.1** *P* **29** *L* **21** # 138

Booth, Brad — Microsoft

Comment Type **ER** *Comment Status* **A**

The (UTP) shown in bullet a is not the first instance of the use of UTP.

SuggestedRemedy

In 96.1, spell out the first use of UTP and note the acronym:
... over one pair of unshielded twisted pair (UTP) cable.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See comment #514

Cl **96** *SC* **96.1.1** *P* **29** *L* **23** # 428

Tazebay, Mehmet — Broadcom

Comment Type **E** *Comment Status* **A**

Add "full duplex" as following to clarify support of full duplex operation only.

SuggestedRemedy

Insert "full duplex operation" after "... at 100 Mb/s

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.1.1** *P* **29** *L* **25** # 458

Tazebay, Mehmet — Broadcom

Comment Type **T** *Comment Status* **A**

There is a missing reference to the channel and 96.7 should be added for clarification and "one pair UTP cable" should be changed to "single balanced twisted pair"

SuggestedRemedy

Change "(over a one pair UTP cable)" to "(over a single balanced twisted pair cabling as defined in 96.7)".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See reponse to comment #514.

Cl **96** *SC* **96.1.2** *P* **15** *L* **27** # 124

Grow, Robert — RMG Consulting

Comment Type **ER** *Comment Status* **A**

PDF page 29 -The title of the sub clause does not agree with the content of the sub clause. All that is discussed is other parts of IEEE 802.3, not other standards. That title in other PHY subclauses typically is referring to the architectural diagram that this draft does not include (e.g., standards specifying the ISO OSI Reference model).

SuggestedRemedy

Change title to 100BASE-T1 architecture.

Response *Response Status* **W**

ACCEPT.

Cl **96** *SC* **96.1.2** *P* **15** *L* **30** # 322

Zimmerman, George — CME Consulting, Inc.

Comment Type **ER** *Comment Status* **A**

No reference is made to the most closely related PHY clause, Clause 25 - except by its common name.

SuggestedRemedy

Add sentence before line 30:
"IEEE 802.3 100BASE-TX PHY is specified in Clause 25, and it operates of two pairs of a channel comprising unshielded copper cabling or better. Like the 100BASE-T1 PHY, this PHY uses ternary signalling and interfaces to the Clause 22 MII. In contrast, the 100BASE-T1 PHY operates using full-duplex communications (using echo cancellation) over a single twisted pair channel.
(then continue with existing statement about 1000BASE-T...

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Insert on page 29, line 33:

"The 100BASE-T1 PHY operates using full-duplex communications (using echo cancellation) over a single balanced twisted-pair. In contrast, the IEEE 802.3 100BASE-TX PHY, specified in Clause 25, operates on two pairs of a channel comprising unshielded copper cabling or better. Like the 100BASE-T1 PHY, this PHY uses ternary signalling and interfaces to the Clause 22 MII. "

Cl **96** *SC* **96.1.2** *P* **15** *L* **30** # 635

Hidaka, Yasuo — Fujitsu Laboratories of

Comment Type **T** *Comment Status* **R**

It is not clear why it refers to 1000BASE-T regarding to the number of pairs, because its data rate is different.

I think reference to 100BASE-T4 or 100BASE-TX is more appropriate regarding to the number of pairs, because their data rate is same.

SuggestedRemedy

Replase line 30 and 31 with the following:
IEEE 802.3 100BASE-T4 PHY specified in Clause 23 operates over four pairs of balanced cable channel. IEEE 802.3 100BASE-TX PHY specified in Clause 25 operates over two pairs of balanced cable channel. In contrast, the 100BASE-T1 PHY operates over a one pair channel.

Response *Response Status* **C**

REJECT.

Several aspects (Full duplex, MASTER-SLAVE, loop timing, etc.) in 100BASE-T1 are similar to 1000BASE-T.

Cl **96** *SC* **96.1.2** *P* **15** *L* **30** # 125

Grow, Robert — RMG Consulting

Comment Type **ER** *Comment Status* **A**

PDF page 29 - 1000BASE=T isn't the only gigabit PHY.

SuggestedRemedy

Delete 'or gigabit'.

Response *Response Status* **W**

ACCEPT.

Cl **96** *SC* **96.1.2** *P* **15** *L* **34** # 126

Grow, Robert — RMG Consulting

Comment Type **ER** *Comment Status* **A**

PDF page 29 - An architecture doesn't interface to anything. (The architecture includes an MII interface. The specifications to that architecture assume there is an MII. Specifically, the RS is specified as communicating to lower sublayers via an MII, and the PCS is specified as being at the other side of that MII.) But the MII is an optional interface. I doubt this one change will cover the number of statements that imply an MII is mandatory, but it is a start.

SuggestedRemedy

The 100BASE-T1 PHY specifications are written assuming an optional Clause 22 MII. Conformant 100BASE-T1 PHY operation is indistinguishable at the MDI independent of the implementation of an MII.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Line 34, remove "architecture".

Cl **96** *SC* **96.1.2** *P* **15** *L* **43** # 636

Hidaka, Yasuo — Fujitsu Laboratories of

Comment Type **T** *Comment Status* **R**

Relationships with 100BASE-T PHY specified in clause 21, repeater specified in clause 27, and auto negotiation specified in clause 28 are expected in this section, but missing.

SuggestedRemedy

Add brief description about relationships with 100BASE-T PHY specified in clause 21, repeater specified in clause 27, andd autonegotiation specified in clause 28 in this section.

Response *Response Status* **C**

REJECT.

Clause 21 and 27 are not listed because 100BASE-T1 only supports full duplex operation. Clause 28 Auto-Negotiation is not supported.

Cl **96** *SC* **96.1.2** *P* **15** *L* **44** # 550

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **R**

The text that starts:
"The specification features that enable achieving the objectives are:"
is not appropriate for an Ethernet specification document. (It is more appropriate to a contribution justifying the choices to be made).

SuggestedRemedy

Remove the quoted text and items a) and b).

Response *Response Status* **C**

REJECT.

This text shows the uniqueness of 100BASE-T1, and it is essential for differentiating from other clauses.

Cl **96** *SC* **96.1.2** *P* **15** *L* **45** # 330

Zimmerman, George — CME Consulting, Inc.

Comment Type **T** *Comment Status* **A**

Echo cancellation isn't necessarily the only way to do full duplex communication, and the text implies it is.

SuggestedRemedy

Change, "and therefore echo cancellation" to "utilizing echo cancellation".

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.1.2** *P* **29** *L* **27** # 307

Thompson, Geoff GraCaSI

Comment Type **ER** *Comment Status* **A**

Title is in accurate. This subclause is not a comparison to other standards" as 1000BASE-T is"," in fact part of "this" (802.3) standard.

SuggestedRemedy

At best"," this clause should be correctly titled but in reality this subclause should not be here at all. (See next comment)

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change
"Relationship of 100BASE-T1 to other standards"

to

"Relationship of 100BASE-T1 to other 802.3 Clauses"

Cl **96** *SC* **96.1.2** *P* **29** *L* **27** # 308

Thompson, Geoff GraCaSI

Comment Type **ER** *Comment Status* **R**

This sub-clause is marketing goals text left over from pre 802.3 days. Any purposeful text here is redundant and should be moved up into the preceding sub-clause. Also it is the wrong tense.

SuggestedRemedy

Delete this sub-clause. The standard can easily stand without it.

Response *Response Status* **W**

REJECT.

This subclause is written to inform readers not involved with the development of 100BASE-T1 and its relationship to other existing 802.3 Clauses.

See example: "Clause 40.1.2 Relationship of 1000BASE-T to other standards"

Cl **96** *SC* **96.1.2** *P* **29** *L* **27** # 43

Ran, Adee Intel

Comment Type **E** *Comment Status* **R**

The other PHYs referenced here are parts of the same standard (802.3), not "other standards", so they are inappropriate here.

compare with 40.1.2 .

This subclause does not appear in recent clauses. See for example clause 80 which has "80.1.3 Relationship of 40 Gigabit and 100 Gigabit Ethernet to the ISO OSI reference model".

Associated clauses can be put in a table, see for example Table 84-1.

The last paragraph of this subclause appears out of place, and is probably not needed.

SuggestedRemedy

Rewrite this subclause as a table like Table 84-1. Remove the last paragraph.

Response *Response Status* **C**

REJECT.

See response to comment #308.

Cl **96** *SC* **96.1.2** *P* **29** *L* **28** # 219

Remein, Duane Huawei Technologies

Comment Type **TR** *Comment Status* **A**

Most if not all PHY specification in 802.3 include a layering diagram such as Figure 40–1 or Figure 32–1.

SuggestedRemedy

Include a similar figure in Cl 96

Response *Response Status* **W**

ACCEPT.

Cl **96** *SC* **96.1.2** *P* **29** *L* **30** # 179

Remein, Duane — Huawei Technologies

Comment Type **E** *Comment Status* **R**

My guess regarding the following statement that you are trying to establish that these two PHYs operate of the same channel model but 100BASE-T1 uses one pair while 1000BASE-T uses four.
"IEEE 802.3 1000BASE-T, or Gigabit, PHY is specified in Clause 40, and it operates over four pairs of a channel compliant with 40.7. In contrast, the 100BASE-T1 PHY operates over a one pair channel."

SuggestedRemedy

Reword to:
The 100BASE-T1 PHY and the 1000BASE-T PHY share a common channel model as described in Clause 40 except that the 100BASE-T1 PHY only uses one of the four wire pairs available in the 1000BASE-T media.

Response *Response Status* **C**

REJECT.

The paragraph depicts the similarities and differences between Clause 40 and Clause 96, and channel models are not the same.

Cl **96** *SC* **96.1.2** *P* **29** *L* **30** # 45

Ran, Adee — Intel

Comment Type **E** *Comment Status* **A**

"channel" is ambiguous here. 40.7 uses the term "link segment" rather than "channel" and refers to a "4-pair Cat 5 balanced cabling system". Suggest being consistent with the terms.

SuggestedRemedy

Unless this text is deleted by another comment: change "four pairs of a channel" to "a 4-pair balanced cabling system" and "one pair channel" to "a single-pair balanced cable"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change
"four pairs of a channel"
to
"a 4-pair balanced cabling system"

Change
"one pair channel"
to
"a single balanced twisted-pair"

Cl **96** *SC* **96.1.2** *P* **29** *L* **45** # 369

Lusted, Kent — Intel

Comment Type **E** *Comment Status* **A**

font of items in alphabetic list are different from the rest of the text.

SuggestedRemedy

Response *Response Status* **C**

ACCEPT.

Text font will be fixed.

Cl **96** *SC* **96.1.2** *P* **29** *L* **49** # 217

Remein, Duane — Huawei Technologies

Comment Type **T** *Comment Status* **A**

the following seems a bit too subjective "the best part of a twisted pair channel". To some the sheathing might be the "best part"

SuggestedRemedy

Clarify what is meant by "best part" (maybe refers to RF spectrum?)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #218.

Cl **96** *SC* **96.1.2** *P* **30** *L* **50** # 218

Remein, Duane — Huawei Technologies

Comment Type **TR** *Comment Status* **A**

Does the following statement imply that such cabling fully supports the advertised 1000 Mbps data rate? Or that one should deploy such cabling? If the lower quality cabling is more expensive will it still work?
"also allow for lower cost (often lower quality) cabling"

SuggestedRemedy

Change to:
"also allow for reduce performance operation over lower quality cabling"

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Page 15 line 41, change
"The 100BASE-T1 PHY leverages 1000BASE-T PHYs, with parts of 100BASE-TX"
to
"The 100BASE-T1 PHY leverages 1000BASE-T and 100BASE-TX PHY technologies"

Replace
"Adopt Pulse Amplitude Modulation 3 (PAM3) to help minimize the bandwidth such that communication occurs in the best part of a twisted pair channel, reduce EMI, and allow a more aggressive EMC filtering and also allow for lower cost (often lower quality) cabling"

with

"Adopt Pulse Amplitude Modulation 3 (PAM3) to help minimize the bandwidth and reduce EMI over single balanced twisted-pair"

Cl **96** *SC* **96.1.2.1** *P* **16** *L* **5** # 318

Zimmerman, George — CME Consulting, Inc.

Comment Type **E** *Comment Status* **A**

Missing "a" makes text read confusing and awkward.

SuggestedRemedy

change "supports one pair twisted pair medium" to "which supports a one pair twisted pair medium"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change
"supports one pair twisted pair medium"

to

"which supports a single balanced twisted-pair medium"

See response to comment #514.

Cl **96** *SC* **96.1.2.1** *P* **30** *L* **1** # 44

Ran, Adee — Intel

Comment Type **E** *Comment Status* **R**

Subclauses 96.1.2.1 to 96.1.2.3 do not seem to fit in the hierarchy under "relationship to other standards". It is not clear where they belong to.

SuggestedRemedy

Delete these subclauses, possibly move text to other subclauses when necessary.

Response *Response Status* **C**

REJECT.

These subclauses establish the relationship with other clauses.

Cl **96** *SC* **96.1.2.2** *P* **16** *L* **11** # 576
Wu, Peter Marvell

Comment Type **ER** *Comment Status* **A**

66.666 is missing bar over last digit.

SuggestedRemedy

fix this instance and other instances.

Response *Response Status* **C**

ACCEPT.

See response to comment #510.

Cl **96** *SC* **96.1.2.2** *P* **16** *L* **17** # 572
Wu, Peter Marvell

Comment Type **E** *Comment Status* **A**

typo

SuggestedRemedy

line 17 change "over _each wire pair_." to "over each wire pair."
line 23 change "Start-of_stream delimiter" to "Start-of-Stream delimiter"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See repsonse to comment #27 and #163.

Cl **96** *SC* **96.1.2.3** *P* **16** *L* **17** # 552
Anslow, Pete Ciena

Comment Type **E** *Comment Status* **A**

In "...PMA transmits over _each wire pair_." there appear to be spurious underscore characters (or underlined spaces).

Also in "e) Robust delimeters for Start-of_stream..."

SuggestedRemedy

Remove them.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #27 and #163.

Cl **96** *SC* **96.1.2.3** *P* **16** *L* **17** # 115
Grow, Robert RMG Consulting

Comment Type **E** *Comment Status* **A**

PDF page 30 - Legacy text that should have been edited? (Over each pair makes no sense when the PHY only uses one pair.)

SuggestedRemedy

'__each wire pair__' with 'a wire pair'.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #514.

Cl **96** *SC* **96.1.2.3** *P* **16** *L* **17** # 612
Hidaka, Yasuo Fujitsu Laboratories of

Comment Type **E** *Comment Status* **A**

"over_each wire pair_" looks odd.

SuggestedRemedy

Change it with "over each wire pair."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #514.

Cl **96** *SC* **96.1.2.3** *P* **16** *L* **17** # 339
Zinner, Helge Robert Bosch GmbH

Comment Type **E** *Comment Status* **A**

each wire pair

SuggestedRemedy

underlines should be removed

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #514.

Cl **96** *SC* **96.1.2.3** *P* **16** *L* **23** # 613
Hidaka, Yasuo — Fujitsu Laboratories of

Comment Type **E** *Comment Status* **A**
"Start-of_stream delimiter (SSD) End-of-Stream (ESD)" seems odd.

SuggestedRemedy
Change it with "Start-of-Stream (SSD), End-of-Stream (ESD)".

Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See response to comment #163.

Cl **96** *SC* **96.1.2.3** *P* **30** *L* **17** # 309
Thompson, Geoff — GraCaSI

Comment Type **ER** *Comment Status* **A**
The word each" is left over from text stolen from 1000BASE-T

SuggestedRemedy
Change text to read: "...the PMA transmits over the single wire pair."

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

See repsonse to comment #27.

Cl **96** *SC* **96.1.2.3** *P* **30** *L* **17** # 429
Tazebay, Mehmet — Broadcom

Comment Type **E** *Comment Status* **A**
There are unnecessary underscores in the text and they should be removed.

SuggestedRemedy
Change "PMA transmits over _each wire pair_." to "PMA transmits over each wire pair."

Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See response to comment #514.

Cl **96** *SC* **96.1.2.3** *P* **30** *L* **17** # 27
Ran, Adee — Intel

Comment Type **TR** *Comment Status* **A**
There is only one wire pair

SuggestedRemedy
Change "each" to "the", delete underlines

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

Refer to comment #514

Cl **96** *SC* **96.1.2.3** *P* **30** *L* **17** # 644
Marris, Arthur — Cadence Design Syst

Comment Type **E** *Comment Status* **A** *Late*
over _each wire pair_.

SuggestedRemedy
Change to "over each wire pair." Also fix "Start-of_stream".

Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See response to comment #27 and #163.

Cl **96** *SC* **96.1.2.3** *P* **30** *L* **17** # 346
Slavick, Jeff — Avago Technologies

Comment Type **E** *Comment Status* **A**
Extra _ characters present.

SuggestedRemedy
Remove the underscore before each and the underscore after pair

Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See response to comment #514.

Cl **96** *SC* **96.1.2.3** *P* **30** *L* **22** # 273

Thompson, Geoff GraCaSI

Comment Type **TR** *Comment Status* **A**

Carrier extension is a) an obsolete artifact of CSMA/CD and b) was never a feature of 100 Mb/s operation.

SuggestedRemedy

Delete the words or carrier extension"

Response *Response Status* **W**

ACCEPT.

Cl **96** *SC* **96.1.2.3** *P* **30** *L* **23** # 181

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **A**

End-of-Stream (ESD)

SuggestedRemedy

End-of-Stream delimiter(ESD)

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.1.2.3** *P* **30** *L* **23** # 68

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

"delimiters" out of place, underline instead of dash

SuggestedRemedy

change

"Robust delimeters for Start-of_stream delimiter (SSD), End-of-Stream (ESD), and other control signals"

to

"Robust encoding for Start-of-Stream delimiter (SSD), End-of-Stream delimiter (ESD), and other control signals"

Response *Response Status* **W**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.1.3** *P* **16** *L* **30** # 323

Zimmerman, George CME Consulting, Inc.

Comment Type **ER** *Comment Status* **A**

the text in this clause and 96.1.4 looks like it is an instruction to the editor to insert, or a placeholder.
there are no explicit notational definitions that I can easily find in the referenced clause.

SuggestedRemedy

Change line 30 to read:
"The notation used in the state diagram follows the conventions of 21.5". (which is what other IEEE 802 clauses read).

Similarly address 96.1.4, line 35.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change
"Notation definitions in 21.5 are used in State diagrams, variable definitions, etc., in this clause."
to
"The notation used in the state diagram follows the conventions of 21.5."

Change
"Service specification methods in 1.2.2 are used in this clause."
to
"The method and notation used in the service specification follows the conventions of 1.2.2."

Cl **96** *SC* **96.1.5** *P* **17** *L* **17** # 169

Law, David HP

Comment Type **T** *Comment Status* **R**

In Figure 96-1 'Functional Block Diagram' the PCS Transmit Enable block has the following inputs:

TX_EN
TX_ER
tx_mode
link_status

In Figure 96-3 'PCS reference diagram' the PCS Transmit Enable block has the following inputs:

TXD<3:0>
TX_EN
TX_ER
tx_mode
link_status

In Figure 96-4 'PCS Data Transmission Enabling state diagram' the inputs are:

TX_EN
TX_ER
tx_mode

SuggestedRemedy

Suggest that [1] the input link_status be removed from the PCS Transmit Enable block in Figure 96-1 'Functional Block Diagram', that [2] the inputs TXD<3:0> and link_status are removed from the PCS Transmit Enable block in Figure 96-4 'PCS Data Transmission Enabling state diagram', [3] Figure 96-4 'PCS Data Transmission Enabling state diagram' be renamed 'PCS Transmit Enable state diagram' and [4] subclause 96.3.2.1 'PCS transmit enabling' be renamed 'PCS Transmit Enable'.

In addition to align the text with the similar text in subclause 96.3.2.3 'PCS transmit function' including the use of a shall statement in respect to the associated state diagram, suggest that subclause 96.3.2.1 be changed to read as follows (suggested text assumes all the changes above area accepted):

96.3.2.1 PCS Transmit Enable

The PCS Data Transmit Enable function shall conform to the PCS Transmit Enable State Diagram in Figure 96-4.

When tx_mode is equal to SEND_N the signals tx_enable_mii and tx_error_mii are equal to the value of the MII signals TX_EN and TX_ER respectively, otherwise tx_enable_mii and tx_error_mii are set to the value FALSE.

Response *Response Status* **C**

REJECT.

Figure 96-4 includes link_status signal at top of the Figure..
Reject [1]: The link_status signal is needed, and is similar to Clause 40.

Reject [2]: This is similar to Clause 40. Also there is no TXD<3:0> in Figure 96-4. Keep link_status as a control signal.

Reject [3]: This is similar to Clause 40.

Accept in Principle [4]: In Figure 96-3 remove the connecting line betwen TXD<3:0> to block PCS TRANSMIT ENABLE.
Page 39 line 48, change "96.3.2.1 PCS transmit enabling" to "96.3.2.1 PCS Data Transmission Enable"
Page 39 line 51, change "As depicted in Figure 96-4, the PCS Data Transmission Enabling process generates the signals tx_enable_mii and tx_error_
mii, which follow MII signals TX_EN and TX_ER when tx_mode is SEND_N, and set as FALSE otherwise."
to
"The PCS Data Transmission Enable function shall conform to the PCS Data Transmission Enabling state diagram in Figure 96-4. When tx_mode is equal to SEND_N, the signals tx_enable_mii and tx_error_mii are equal to the value of the MII signals TX_EN and TX_ER respectively, otherwise tx_enable_mii and tx_error_mii are set to the value FALSE. "

Cl **96** *SC* **96.1.5** *P* **31** *L* **1** # 205

Remein, Duane Huawei Technologies

Comment Type **ER** *Comment Status* **A**

Figure 96-1 may not print correctly on a black & white printer (like the one I use) and should therefore the figure should be black & white. It would be nice also if the font size was not quite so small. Avoid signal names from crossing lines (received_clock & recovered_clock for example)

SuggestedRemedy

Convert all figures to B&W. If possible increase font size to 8 pt or better.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See resposne to comment #553. Font size will also be fixed.

Cl **96** *SC* **96.10** *P* **63** *L* **6** # 571
Anslow, Pete Ciena

Comment Type **TR** *Comment Status* **A**
The PICS proforma is empty

SuggestedRemedy
Fill out the PICS proforma

Response *Response Status* **W**
ACCEPT.

Next revision of the draft will contain the PICS proforma.

Cl **96** *SC* **96.10** *P* **76** *L* **1** # 134
Grow, Robert RMG Consulting

Comment Type **TR** *Comment Status* **A**
PDF page 76 - The absence of the PICS shows that the draft is not technically complete.

SuggestedRemedy
Complete the PICS.

Response *Response Status* **W**
ACCEPT.

See response to comment #571.

Cl **96** *SC* **96.10** *P* **76** *L* **1** # 262
Thompson, Geoff GraCaSI

Comment Type **ER** *Comment Status* **A**
There is no substance to the PICs

SuggestedRemedy
Complete the PICs Pro Forma

Response *Response Status* **W**
ACCEPT.

Cl **96** *SC* **96.10** *P* **76** *L* **1** # 362
D'Ambrosia, John Dell

Comment Type **T** *Comment Status* **A**
I found 89 instances of the word "shall"
no entries in PICS section,a nd not clear even all sections with normative requiremsnts are even there

SuggestedRemedy
Fill in pics supporting normative shall statements in text.

Response *Response Status* **C**
ACCEPT.

Cl **96** *SC* **96.10** *P* **77** *L* **1** # 348
Slavick, Jeff Avago Technologies

Comment Type **TR** *Comment Status* **A**
Missing PICS for 4B3B encoding

SuggestedRemedy
Add PICS

Response *Response Status* **W**
ACCEPT.

See response to comment #571.

Cl **96** *SC* **96.10** *P* **77** *L* **1** # 355
Slavick, Jeff Avago Technologies

Comment Type **TR** *Comment Status* **A**
Missing PICS for PMA electrical requirements

SuggestedRemedy
Add missing PICS

Response *Response Status* **W**
ACCEPT.

See response to comment #571.

Cl **96** *SC* **96.10** *P* **77** *L* **1** # 354
Slavick, Jeff Avago Technologies

Comment Type **TR** *Comment Status* **A**
Missing PICS for 3B4B decoding

SuggestedRemedy
Add missing PICS

Response *Response Status* **W**
ACCEPT.

See response to comment #571.

Cl **96** *SC* **96.10** *P* **77** *L* **1** # 353
Slavick, Jeff Avago Technologies

Comment Type **TR** *Comment Status* **A**
Missing PICS for rx de-scrambler

SuggestedRemedy
Add missing PICS

Response *Response Status* **W**
ACCEPT.

See response to comment #571.

Cl **96** *SC* **96.10** *P* **77** *L* **1** # 352
Slavick, Jeff Avago Technologies

Comment Type **TR** *Comment Status* **A**
Missing PICS for scrambler

SuggestedRemedy
Add missing PICS

Response *Response Status* **W**
ACCEPT.

See response to comment #571.

Cl **96** *SC* **96.10** *P* **77** *L* **1** # 350
Slavick, Jeff Avago Technologies

Comment Type **TR** *Comment Status* **A**
Missing PICS for ignore of stuff bits by Rx

SuggestedRemedy
Add missing PICS

Response *Response Status* **W**
ACCEPT.

See response to comment #571.

Cl **96** *SC* **96.10** *P* **77** *L* **1** # 349
Slavick, Jeff Avago Technologies

Comment Type **TR** *Comment Status* **A**
Missing PICS for Tx stuff bits

SuggestedRemedy
Add missing PICS

Response *Response Status* **W**
ACCEPT.

See response to comment #571.

Cl **96** *SC* **96.10** *P* **77** *L* **1** # 351
Slavick, Jeff Avago Technologies

Comment Type **TR** *Comment Status* **A**
Missing PICS for tx_error transmission

SuggestedRemedy
Add missing PICS

Response *Response Status* **W**
ACCEPT.

See response to comment #571.

Cl **96** *SC* **96.10.1** *P* **62** *L* **8** # 561

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **A**

The text that follows "...is claimed to conform to Clause 96, " should exactly match the clause title.

Same for the clause title in the top row of the table in 96.10.2.2 and the text after "PICS proforma tables for " in the heading of 96.10.4
The text should be "Physical Coding Sublayer (PCS), Physical Medium Attachment (PMA) sublayer and baseband medium, type 100BASE-T1"

Also, in the table in 96.10.2.2 "802.3xx-201x" should be "802.3bw-201x"

SuggestedRemedy

In 96.10.1 change:
"conform to Clause 96, Physical Medium Attachment (PMA)..." to:
"conform to Clause 96, Physical Coding Sublayer (PCS), Physical Medium Attachment (PMA)..."

In the top row of the table in 96.10.2.2, change:
"IEEE Std 802.3xx-201x, Clause 96, Physical Medium Attachment (PMA)..." to:
"IEEE Std 802.3bw-201x, Clause 96, Physical Coding Sublayer (PCS), Physical Medium Attachment (PMA)..." and in the third row change "802.3xx-201x" to "802.3bw-201x"

In the heading of 96.10.4, change:
"PICS proforma tables for Physical Medium Attachment (PMA)..." to:
"PICS proforma tables for Physical Coding Sublayer (PCS), Physical Medium Attachment (PMA)..."

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.10.2.2** *P* **62** *L* **44** # 628

Hidaka, Yasuo — Fujitsu Laboratories of

Comment Type **E** *Comment Status* **A**

The table external border lines have inconsistent thickness.

SuggestedRemedy

Make the horizontal border lines at line 44 and 46 thick.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.10.3** *P* **63** *L* **2** # 338

Zimmerman, George — CME Consulting, Inc.

Comment Type **TR** *Comment Status* **A**

PICS are blank

SuggestedRemedy

Write, fill in and check PICS

Response *Response Status* **W**

ACCEPT.

See response to comment #571.

Cl **96** *SC* **96.2** *P* **18** *L* **13** # 332

Zimmerman, George — CME Consulting, Inc.

Comment Type **TR** *Comment Status* **A**

FORCE mode is used without definition or pointer to section describing what it is. While the concept appears clear, using it as a name of a mode, should have a pointer to the mode. It appears that the best definition is in 96.4.4.

SuggestedRemedy

Add cross-reference to end of line 13, after "FORCE mode". (e.g., See Clause 96.4.4)

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Comment #132 has made an appropiate change to define FORCE Mode. Use suggested remedy to add cross reference at end of line 13.

Cl **96** *SC* **96.2** *P* **18** *L* **3** # 324

Zimmerman, George — CME Consulting, Inc.

Comment Type **ER** *Comment Status* **A**

Language is inconsistent with that of standards requirements.

This same general comment applies to 96.3.1, 96.3.2.4.1, 96.3.2.4.2, 96.3.3.3, 96.4.1

SuggestedRemedy

In 96.2, replace "adopts the service primitives.." with "shall use the service primitives in"

Similarly edit other referenced clauses.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Will use commentors suggested remedy for consistent language in 96.2, 96.3.1, 96.3.2.4.1, 96.3.2.4.2, 96.3.3.3, and 96.4.1.

Cl **96** *SC* **96.2** *P* **32** *L* **1** # 263

Thompson, Geoff GraCaSI

Comment Type **T** *Comment Status* **R**

Clause 40 seems like a poor choice for a primitive reference.

SuggestedRemedy

Take a look at the older 100 Mb/s clauses for a closer match. Refer to a 100 Mb/s clause. Please consider cl. 32.

Response *Response Status* **C**

REJECT.

100BASE-T1 closely follows the Clause 40 service primitives and interfaces, except 100mbps operation.

Cl **96** *SC* **96.2** *P* **32** *L* **11** # 220

Remein, Duane Huawei Technologies

Comment Type **TR** *Comment Status* **A**

This statement is contrary to the following objective "The resulting standard will not preclude single pair auto-negotiation."
c) The 100BASE-T1 PHY does not use auto-negotiation due to associated latency that does not meet start-up time requirements of automotive networks. The 100BASE-T1 PHY MASTER-SLAVE relationship is set by FORCE mode.

SuggestedRemedy

Strike the statement.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change
"The 100BASE-T1 PHY does not use auto-negotiation due to associated latency that does not meet start-up time requirements of automotive networks. The 100BASE-T1 PHY MASTER-SLAVE relationship is set by FORCE mode."

to

"The 100BASE-T1 PHY MASTER-SLAVE relationship is set by FORCE mode."

Cl **96** *SC* **96.2** *P* **32** *L* **14** # 46

Ran, Adee Intel

Comment Type **E** *Comment Status* **R**

"FORCE mode" is not defined anywhwere in this draft, and is not a generally regocgnizable term. Based on the description here and elsewhere, it is not a "mode" since there is no other way to operate.

The way to set the master/slave relatinoship seems to be by what is usually called "management". If this term is too speficit, an alternative is "external configuration".

This applies to several other places where "FORCE mode" appears.

SuggestedRemedy

change "is set by FORCE mode" to "is set by management".

Make similar changes throughout the draft as appropriate.

Response *Response Status* **C**

REJECT.

See response to comment #132, a definition for FORCE mode is now provided.

Cl **96** *SC* **96.2.1.1** *P* **32** *L* **26** # 645

Marris, Arthur Cadence Design Syst

Comment Type **E** *Comment Status* **A** *Late*

Double ".."

SuggestedRemedy

Delete one of them and scrb the document for other occurences. Also scrub document for " -by" and replace with "by" for example see page 32 line 37.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 182. Will also scrub draft for erroneous "-".

Cl **96** *SC* **96.2.1.1** *P* **32** *L* **26** # 1

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

Extra period at end of line..

SuggestedRemedy

Use one.

Response *Response Status* **W**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.2.1.1.1** *P* **32** *L* **34** # 182

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **A**

Extraneous hyphen 100BASE-T1-initialization (3x). Also have a spare dash in front of "by" on line 37

SuggestedRemedy

remove extraneous characters.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Use commentors suggested remedy to change
"100BASE-T1-initialization"
to
"100BASE-T1 initialization"

and

change
"--by"
to
"by"

Cl **96** *SC* **96.2.2.1** *P* **32** *L* **24** # 237

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **R**

What exactly PMA_LINK.request means is not explained.

SuggestedRemedy

Provide a concise meaning for this primitive.

Response *Response Status* **C**

REJECT.

PMA_LINK.request is defined in 96.2.1.1, and Semantics of the primitive is defined in 96.2.1.1.1.

Cl **96** *SC* **96.2.4.1** *P* **35** *L* **18** # 206

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **R**

From Fig 96-1 it appear that config operates on PMA Receive along with PMA Transmit

SuggestedRemedy

Change "PCS and PMA Transmit" to "PCS and PMA"

Response *Response Status* **C**

REJECT.

Current figure is similar to 40.2.4.1.

Cl **96** *SC* **96.2.4.3** *P* **35** *L* **33** # 431

Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

"Clock Recovery" is capitalized for the the first letters. It should be "PMA clock recovery perform".

SuggestedRemedy

Change "PMA Clock Recovery perform" to "PMA clock recovery perform"

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.2.5.1** *P* **35** *L* **51** # 227

Remein, Duane — Huawei Technologies

Comment Type **E** *Comment Status* **A**

Not sure if this is a dash 1 or minus 1 (minus sign should use an EN dash, Ctrl-q Shift-p in framemaker). Looks like a dash here but is OK on pg 36 ln 25

SuggestedRemedy

Use en dash for minus sign if not already doing so.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 556.

Cl **96** *SC* **96.2.5.2** *P* **36** *L* **3** # 461

Tazebay, Mehmet — Broadcom

Comment Type **TR** *Comment Status* **A**

The PCS continuously generates PMA_UNITDATA.request (SYMB_1D) synchronously with every transmit clock TX_TCLK cycle. Therefore, "continuously" and "TX_CLK" should be specified.

SuggestedRemedy

Insert "continuously" after "The PCS".

Insert "TX_TCLK" after ".. every transmit clock"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change
"The PCS generates PMA_UNITDATA.request (SYMB_1D) synchronously with every transmit clock cycle."

to

"The PCS continously generates PMA_UNITDATA.request (SYMB_1D) synchronously with every TX_TCLK cycle."

Cl **96** *SC* **96.3** *P* **24** *L* **37** # 556

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **A**

Minus signs in IEEE documents use an en dash

SuggestedRemedy

change the "-" in "(+1, 0, -1)" to an en dash (Ctrl-q Shft-p).
Change any other minus signs in the draft to be an en dash

Response *Response Status* **C**

ACCEPT.

Use 'en dash' to represent 'minus' symbol. Will scrub draft for other instances.

Cl **96** *SC* **96.3** *P* **38** *L* **33** # 28

Ran, Adee Intel

Comment Type **TR** *Comment Status* **A**

Several issues with this paragraph:

Rate unit should be Baud, not Hz.

"ternary symbol pair" has a defined term "code-group" in the definitions (subclause 1.4).

Code groups are not multiplexed with anything, just serialized. The result is a stream of ternary symbols, not "1-D 3 level coding", sent to the PMA.

Figure 96-3 includes "PCS transmit enable", and doesn't include "PCS Reset".

Sentences should be reordered for clarity.

SuggestedRemedy

Change
"converts the stream of 4-bits at 25 MHz to a stream of 3-bits at 33.333 MHz"

to

"converts the stream of 4-bit words at 25 MBd to a stream of 3-bit words at 33.333 MBd".

Change
"stream of ternary symbols pairs"

to

"Stream of code-groups".
Optionally, add "(pairs of ternary symbols)" since this is the first time the term appears.

Change

"These ternary symbol pairs are then multiplexed to a serialized stream of symbols at 66.666 MHz. As shown in Figure 96-3, the PCS operating functions are PCS Reset, PCS Transmit, and PCS Receive. PCS passes the 1-D 3 level (+1, 0, -1) coding to the PMA to convert to electrical signaling."

to

"These code-groups are then serilized to a stream of ternary symbols at 66.666 MBd, which are sent to the PMA. As shown in Figure 96-3, the PCS operating functions are PCS Transmit Control, PCS Transmit, and PCS Receive."

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change
"converts the stream of 4-bits at 25 MHz to a stream of 3-bits at 33.333 MHz"
to
"converts the stream of 4-bit words at 25 MBd to a stream of 3-bit words at 33.333 MBd".

Change
"stream of ternary symbols pairs"
to
"Stream of code-groups (pairs of ternary symbols)".

Change

"These ternary symbol pairs are then multiplexed to a serialized stream of symbols at 66.666 MHz. As shown in Figure 96-3, the PCS operating functions are PCS Reset, PCS Transmit, and PCS Receive. PCS passes the 1-D 3 level (+1, 0, -1) coding to the PMA to convert to electrical signaling."

to

"These code-groups are then serilized to a stream of ternary symbols at 66.666 MBd, which are sent to the PMA. As shown in Figure 96-3, the PCS operating functions are PCS Transmit Control, PCS Transmit, and PCS Receive."

Cl **96** *SC* **96.3** *P* **38** *L* **37** # 432

Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

Better description needs to be defined for the interface between PCS and PMA.

SuggestedRemedy

Change "PCS passes the 1-D 3 level (+1, 0, -1) coding to the PMA to convert to electrical signaling." to "PCS passes the ternary symbols to the PMA to convert to electrical signaling.".

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3** *P* **38** *L* **38** # 29

Ran, Adee Intel

Comment Type **TR** *Comment Status* **A**

The previous paragraph describes the functions in the transmit direction. The functions on the receive direction are missing.

SuggestedRemedy

Either add a matching paragraph for the receive direction, or move the previous paragraph to the PCS transmit subclause, 96.3.2.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Move "The PCS performs a 4B3B conversion of the nibbles received at the MII, creates the ternary symbols, and then sends the symbols to the PMA for further processing. It receives 4 bits at the MII using TX_CLK, and converts the stream of 4-bits at 25 MHz to a stream of 3-bits at 33.333 MHz . The bits are then scrambled and converted through PCS encoding to a stream of ternary symbols pairs. These ternary symbol pairs are then multiplexed to a serialized stream of symbols at 66.666 MHz."
to
page 41 line 2.

Change
"As shown in Figure 96-3, the PCS operating functions are PCS Reset, PCS Transmit, and PCS Receive. PCS passes the 1-D 3 level (+1, 0, -1) coding to the PMA to convert to electrical signaling."
to
"Physical Coding Sublayer (PCS) consists of PCS Reset, PCS Transmit and PCS Receive functions as shown in Figure 96-3. PCS Transmit function is explained in section 96.3.2, and PCS Receive function is explained in section 96.3.3."

Cl **96** *SC* **96.3.1** *P* **39** *L* **44** # 271

Thompson, Geoff GraCaSI

Comment Type **E** *Comment Status* **A**

Reference requires reader to go to a different volume of the std.

SuggestedRemedy

Replace reference with functional text.

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.3.2.1** *P* **25** *L* **25** # 167

Law, David HP

Comment Type **E** *Comment Status* **A**

In Figure 96-4 'PCS Data Transmission Enabling state diagram' the not equals function should be represented by the mathematical 'not equal to' symbol rather than '!=' (see IEEE Std 802.3-2012 Table 21-1 1-State diagram operators).

This comment also applies to Figure 96-9 'PCS Receive state diagram' and Figure 96-16 'Link Monitor State Diagram'.

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT.

Replace "!=' in diagrams to "≠"

Cl **96** *SC* **96.3.2.1.1** *P* **26** *L* **41** # 320

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **A**

Definition of variables isn't written as a definition (tx_enable_mii and tx_error_mii)

SuggestedRemedy

replace "It is generated..." with "The tx_enable_mii variable generated..." (or tx_error_mii variable, as appropriate

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.2.1.1** *P* **40** *L* **33** # 189

Remein, Duane Huawei Technologies

Comment Type **ER** *Comment Status* **A**

Variables, counters etc. should use para style VariableList per current template

SuggestedRemedy

Use VariableList style for all variables, counters etc.

Response *Response Status* **U**

ACCEPT.

Cl **96** *SC* **96.3.2.1.1** *P* **40** *L* **40** # 207

Remein, Duane — Huawei Technologies

Comment Type **T** *Comment Status* **A**

Variables tx_enable_mii and tx_error_mii appear to be divided by nothing.
More importantly while the description tells me where these variables are generated it tells me nothing about what they mean.

SuggestedRemedy

Remove division sign after variable name.
Add formal definition of variables
tx_enable_mii
When set to FALSE transmission is disabled, when set to TRUE transmission is enabled.
tx_error_mii
When this variable is set to FALSE it indicates an errored transmission, when set to TRUE it indicates a non-errored transmission.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Accept: Remove division sign.

Accept: Add formal definition of variables.

Reject: Change for tx_enable_mii description.

Cl **96** *SC* **96.3.2.2.1** *P* **27** *L* **8** # 325

Zimmerman, George — CME Consulting, Inc.

Comment Type **ER** *Comment Status* **A**

"could be" is improper language for a standards implementation option (used 3 times)

SuggestedRemedy

Replace "could be" with "may be" (2 places in 96.3.2.2.1, one in 96.3.2.2.2)

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #3.

Cl **96** *SC* **96.3.2.2.1** *P* **41** *L* **3** # 2

Ran, Adee — Intel

Comment Type **ER** *Comment Status* **A**

The contents of this subclause does not match its title.

SuggestedRemedy

Change to an appropriate title or change the text in the paragraph to match the title.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change title from
"4B3B conversion for control signals"
to
"Control signals in 4B/3B conversion"

Cl **96** *SC* **96.3.2.2.1** *P* **41** *L* **8** # 3

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

Although "Could be" is not addressed by the style manual, it is unusual. We typically use "is" or "may".

Rephrase for clarity.

SuggestedRemedy

Change

"TX_CLK could be from local crystal or oscillator if it is in MASTER mode
or from recovered clock if it is in SLAVE mode. The pcs_txclk could be derived from the same clock source as TX_CLK; however, with proper clock division factor to get to the required frequency."

to

"TX_CLK may be derived from a local crystal or oscillator in MASTER mode. It is derived from recovered clock in SLAVE mode. The pcs_txclk is derived from the same clock source as TX_CLK, with proper clock division factor to get to the required frequency."

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change

"TX_CLK could be from local crystal or oscillator if it is in MASTER mode
or from recovered clock if it is in SLAVE mode. The pcs_txclk could be derived from the same clock source as TX_CLK; however, with proper clock division factor to get to the required frequency."

to

"TX_TCLK shall be derived from a local source in MASTER mode. TX_TCLK shall be derived from the recovered clock in SLAVE mode. The pcs_txclk is derived from the same clock source as TX_TCLK, with proper clock division factor to get to the required frequency."

Cl **96** *SC* **96.3.2.2.1** *P* **41** *L* **8** # 208

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **A**

The phrase "local crystal or oscillator" denotes implementation.

SuggestedRemedy

Change to "a local source"

Response *Response Status* **C**

ACCEPT.

See response to comment 3.

Cl **96** *SC* **96.3.2.2.2** *P* **41** *L* **15** # 228

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **A**

What are these packet things? We typically deal only in frames in 802.3.

SuggestedRemedy

Change 13 instances of packet to frame

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.2.2.2** *P* **41** *L* **16** # 47

Ran, Adee Intel

Comment Type **E** *Comment Status* **A**

Although "packet" has a specific meaning in Ethernet, is a very generic term. I would suggest using "Ethernet packet" and adding an appropriate xref.

SuggestedRemedy

Change "when the number of bits of a packet is not multiple of three" to "when the number of bits of an Ethernet packet (see 3.1.1) is not multiple of three".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #228.

Cl **96** *SC* **96.3.2.2.2** *P* **41** *L* **17** # 171

Law, David HP

Comment Type **T** *Comment Status* **A**

The text states that the '... tx_enable signal shall stay high ...' yet according to subclause 96.3.2.3.1 'Variables' tx_enable can take either the values ' TRUE or FALSE'.

SuggestedRemedy

Suggest that '... and correspondingly, tx_enable signal shall stay high till all the bits in a packet ...' be to read '... and correspondingly, the tx_enable signal remains TRUE until all the bits in a packet ...'.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.2.2.2** *P* **41** *L* **18** # 4

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

"could" should be "may" here.

SuggestedRemedy

replace.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment 3.

Cl **96** *SC* **96.3.2.3** *P* **41** *L* **22** # 5

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

Subclause shares its title with its parent (96.3.2).

SuggestedRemedy

Rename somehow, or restructure.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change
"96.3.2 PCS transmit function"
to
"96.3.2 PCS transmit"

Change
"96.3.2.3 PCS transmit function"
to
"96.3.2.3 PCS Transmit Overview".

Change
"96.3.3 PCS Receive"
to
"96.3.3 PCS Receive Function"

Cl **96** *SC* **96.3.2.3** *P* **41** *L* **25** # 170

Law, David HP

Comment Type **T** *Comment Status* **R**

Minor point, but I believe that requiring conformance to a state diagram is sufficient, and by definition requires conformance to its associated state variables, functions, timers and messages is not necessary.

SuggestedRemedy

Suggest that the text '... and the associated state variables, functions, timers and messages' be deleted.

Response *Response Status* **C**

REJECT.

Its more clear to keep those associated information.

Cl **96** *SC* **96.3.2.3** *P* **41** *L* **28** # 6

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

"An" appears in plain text here, but elsewhere it is italicized with "n" as a subscript. Be consistent.

SuggestedRemedy

Italicize and change n to subscript, three times in this paragraph and possibly elsewhere.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #433.

Cl **96** *SC* **96.3.2.3** *P* **41** *L* **28** # 433

Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

On page 41 lines 28 & 29, the "n" subcharacter should be italic in "An"

SuggestedRemedy

Change "An" to "A{\italic n}"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Italicize "An". Additionally "n" should be a subscript.

Cl **96** *SC* **96.3.2.3** *P* **41** *L* **28** # 314

Thompson, Geoff GraCaSI

Comment Type **ER** *Comment Status* **A**

This entire paragraph lacks the formatting that it should have. It appears that it was cut from elsewhere and pasted as plain text. This has removed essential information.

SuggestedRemedy

Provide/restore the essential style information for this paragraph. Especially notable is the lack of bold, italic and subscripting on the term A sub n.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #433.

Cl **96** *SC* **96.3.2.3** *P* **41** *L* **28** # 190

Remein, Duane Huawei Technologies

Comment Type **ER** *Comment Status* **A**

Inconsistent ref to symbol as An. Sometimes A is in italic and sometime it is not. Sometime n is italic subscripted sometime not. Compare ln 28 to line 51.

SuggestedRemedy

Be consistent.
I suggest italics to be consistent with IEEE style guide (variables should be in italics) without subscripting (to be nicer to your editors).

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #433.

Cl **96** *SC* **96.3.2.3** *P* **41** *L* **29** # 286

Thompson, Geoff GraCaSI

Comment Type **E** *Comment Status* **A**

Grammar. Incorrect article in the 2nd sentence

SuggestedRemedy

Change text from ...over a wire pair BI_DA." to "...over the wire pair BI_DA."

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.3.2.3** *P* **41** *L* **30** # 287

Thompson, Geoff GraCaSI

Comment Type **E** *Comment Status* **A**

Grammar. Incorrect article in the 3rd sentence.

SuggestedRemedy

Change text from The integer", n," is time index introduced..." to "The integer", n, is a time index," introduced..."

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.3.2.3** *P* **41** *L* **31** # 288

Thompson, Geoff GraCaSI

Comment Type **E** *Comment Status* **A**

The 5th sentence has generally poor grammar and convoluted construction.

SuggestedRemedy

Replace with the following: In the normal mode of operation"," the PCS Transmit generates sequences of vectors using the encoding rules defined for the idle mode when between streams of data as indicated by the parameter tx_enable."

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.2.3** *P* **41** *L* **32** # 289

Thompson, Geoff GraCaSI

Comment Type **E** *Comment Status* **A**

The 6th sentence has generally poor grammar and missing articles

SuggestedRemedy

Replace with the following: Upon the assertion of tx_enable", the PCS Transmit function passes an SSD of 6 consecutive symbols to PMA," which replaces the first 9 bits of preamble."

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.2.3** *P* **41** *L* **33** # 30

Ran, Adee Intel

Comment Type **TR** *Comment Status* **A**

PAM3 is a modulation scheme, not an encoding technique.

The actual modulation scheme (how symbol values relate to voltage levels) doesn't seem to be specified anywhere.

SuggestedRemedy

Change "tx_data[2:0] is encoded using PAM3 technique into a vector of ternary symbols" to "tx_data[2:0] is encoded into ternary symbols as specified in 96.3.2.4, and these terrnary symbosl are converted to an analog signal using a PAM3 modulation scheme (see 96.x.y.z)".

Add a modulation scheme specification subclause.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change "tx_data[2:0] is encoded using PAM3 technique into a vector of ternary symbols"
to
"tx_data[2:0] is encoded into ternary symbols as specified in 96.3.2.4, and these ternary symbols are converted to an analog signal using a PAM3 modulation scheme"

Cl **96** *SC* **96.3.2.3** *P* **41** *L* **34** # 290

Thompson, Geoff GraCaSI

Comment Type **E** *Comment Status* **A**

Missing article

SuggestedRemedy

Change text from: special code ESD (or..." TO: "a special code ESD (or..."

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.2.3** *P* **41** *L* **35** # 285

Thompson, Geoff GraCaSI

Comment Type **E** *Comment Status* **A**

areis" appears in the text with underscore and strikeout on what is supposed to be the clean version of the draft

SuggestedRemedy

Replace "areis" with underscore and strikeout in the text with a plain text "is"

Response *Response Status* **C**

ACCEPT.

Change
"areis"
to
"is"

Appropriate markups will be applied.

Cl **96** *SC* **96.3.2.3** *P* **41** *L* **37** # 291

Thompson, Geoff GraCaSI

Comment Type **E** *Comment Status* **A**

Lines 37 to end of paragraph) Comparison text is unnecessary to the specification. Remove comparison and simplify

SuggestedRemedy

Replace old text starting with Unlike" with the following text: "100BASE-T1 only has one special symbol pair (0", 0) that is not used by
Idle or Data symbols. Therefore, at the end of data packet," tx_error is examined to determine whether ESD3 or ERR_ESD

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.2.3** *P* **41** *L* **38** # 7

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

Describing behavior of other PHYs is not neccesary.

Unneeded normative statements (especially when referring to other clauses, but also here, as this whole subclause is normative).

SuggestedRemedy

Consider deleting the text

"Unlike 100BASE-TX or 1000BASE-T where symbols shall be exclusively assigned for TX_ER assertion occurrence, 100BASE-T1 only has one special symbol pair (0, 0) that is not used by Idle or Data symbols. Therefore, rather than insert ERROR symbols at the place TX_ER is asserted,"

If this text is not deleted, Change "shall be exclusively" to "are exclusively".

Change "shall be transmitted" to "are to be transmitted".

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #291.

Cl **96** *SC* **96.3.2.3** *P* **41** *L* **51** # 292

Thompson, Geoff GraCaSI

Comment Type **E** *Comment Status* **A**

This doesn't seem to actually be a sentence.

SuggestedRemedy

How about: If TXMODE has the value SEND_N", PCS Transmit generates symbol An, at each symbol period, which represents data," special control symbols like SSD/ESD or IDLE symbols as defined in the following subsections."

Response *Response Status* **C**

ACCEPT.

Change
"If TXMODE has the value SEND_N, PCS Transmit generates symbol An, at each symbol period, that are representing
data, special control symbols like SSD/ESD or IDLE symbols which are defined in the following subsections."

to

"If TXMODE has the value SEND_N, PCS Transmit generates symbol An, at each symbol period, which represents
data, special control symbols like SSD/ESD or IDLE symbols as defined in the following subsections."

Cl **96** *SC* **96.3.2.3** *P* **41** *L* **51** # 48

Ran, Adee Intel

Comment Type **E** *Comment Status* **A**

A_n are multiple symbols (indexed by n).

"SSD" is an initialism and can only be read by spelling out the letters, so should be preceded by "an" (as in "an MDI").

SuggestedRemedy

Change "symbol A_n" to "symbols A_n".

Change "inserting a SSD" to "inserting an SSD".

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.2.3** *P* **42** *L* **1** # 293

Thompson, Geoff GraCaSI

Comment Type **E** *Comment Status* **A**

Missing article

SuggestedRemedy

Change: transmitted symbols" TO: "the transmitted symbols"

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.3.2.3** *P* **42** *L* **2** # 20

Ran, Adee Intel

Comment Type **T** *Comment Status* **A**

Is tranining a stage (as used here), a mode (as in the previous page) or an operation (page 31)?

The receiver side can use its own transmitted symbols for echo cancellation; but it seems that in this context it should use the received signal, rather than the transmitted symbols from the partner (to which it doesn't have direct access).

Also, "open the eye" is inappropriate here; the "eye" is unobservable inside this kind of receiver.

Overall, shis subclause should describe the transmitter, not the receiver.

SuggestedRemedy

Change

"At training or retraining stage when PHY is in SEND_I mode, transmitted symbols are used at receiver side to acquire timing synchronization and open the eye for link up"

to

"During training operation (when tx_mode is SEND_I), knowledge of the transmitted symbols may be used at receiver side to perform any signal conditioning neccesary for meeting the required performance during normal operation".

Alternatively, delete this sentence altogether.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.2.3** *P* **42** *L* **40** # 229

Remein, Duane — Huawei Technologies

Comment Type **E** *Comment Status* **A**

Figure 96-5 crosses page.

SuggestedRemedy

Split into 3 separate figures

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #294.

Cl **96** *SC* **96.3.2.3** *P* **42** *L* **44** # 294

Thompson, Geoff — GraCaSI

Comment Type **E** *Comment Status* **A**

Missing title for figure. When figures split across pages there needs to be figure titles (e.g. Figure 96-5a, Figure 96-5b) on each page.

SuggestedRemedy

Split and sub-title figure to accommodate pagination

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.2.3** *P* **42** *L* **8** # 436

Tazebay, Mehmet — Broadcom

Comment Type **T** *Comment Status* **A**

In Figure 96-5 (page 42 lines 8, 18, 27, 37), MII data is shown 2 nibbles of a byte (d0 d0 d1 d1 d2 d2 ...) for 4B3B MII signal conversion but it is not necessary and it should be renumbered (d0 d1 d2 d3 ...)

SuggestedRemedy

Revise the figure 96-5 in order to reflect "d0 d1 d2 d3 ..." instead of "d0 d0 d1 d1 ..". The file 4B3B_MII_conversion_Fig96_5_partA.vsd is attached.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.2.3** *P* **43** *L* **20** # 172

Law, David — HP

Comment Type **T** *Comment Status* **A**

Each state of the PCS Transmit State Diagram (Figure 96-6) contains a TSPCD which would appear to be an alias for a message, however TSPCD is not defined in subclause 96.3.2.3.4 'Messages', a subclause of subclause 96.3.2.3 'PCS transmit function'. Instead TSPCD is defined as 'Transmit Symbol Pair Converted Done, synchronized with PCS transmit clock pc_txclk of frequency 33.333 MHz.' in subclause 96.3.3.1.1 'Variables' which is a subclause of 96.3.3.1 'PCS Receive overview'. Based on this the definition of TSPCD seems to be in the wrong subclause, however the transition from each state in the PCS Transmit State Diagram is already controlled by STD (Alias for symb_pair_timer_done) so not sure if this additional time is required.

Subclause 96.3.2.3.2 'Functions' states that the ENCODE function outputs a tx_symb_vector which is defined as a vector of ternary symbols, yet in the Figure 96-6 'PCS Transmit state diagram' the output of the ENCODE function in the state 'TRANSMIT DATA' is assigned directly to tx_symb_pair which is defined as pair of ternary symbols.

The variable tx_symb_pair is only used in Figure 96-6 'PCS Transmit state diagram' and there no reference to it elsewhere, in particular no reference in respect to the 2D to 1D conversation required to create tx_symb_vector, I assume that the conversion is actually performed by TSPCD which should be a function and not a variable, and is described in subclause 96.3.2.4.10 'Generation of symbol sequence'.

Finally there seems to be no use of the message PUDR defined in subclause 96.3.2.3.4 to transfer the tx_symb_vector to the PMA.

SuggestedRemedy

Suggest that:

[1] The definition of TSPCD is moved from subclause 96.3.3.1.1 'Variables' of PCS Receive to subclause 96.3.3.1.2 'Functions' of PCS Transmit.

[2] All instances of TSPCD be changed to TSPC and that the definition of TSPC be changed to read 'Transmit Symbol Pair Convert, this function takes as its argument the value of tx_symb_pair and returns the corresponding tx_symb_vector as defined in subclause 96.3.2.4.10.

[3] The function PUDR is added to each state of Figure 96-6 'PCS Transmit state diagram'.

[4] The definition of the ENCODE function should be change from '... and returns the corresponding tx_symb_vector.' to read '... and returns the corresponding tx_symb_vector.'.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

[1] & [2]: See response to comment #465.

[3]: See response to comment #462.

[4]: Suggested remedy is the same as the text.

Cl **96** *SC* **96.3.2.3** *P* **43** *L* **20** # 465

Tazebay, Mehmet Broadcom

Comment Type **TR** *Comment Status* **A**

In Figure 96-6 PCS Transmit State Diagram, "TSPCD" must be removed.

PCS Transmit State Diagram is attached.

SuggestedRemedy

Change figure 96.6 as suggested.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.2.3** *P* **43** *L* **20** # 295

Thompson, Geoff GraCaSI

Comment Type **E** *Comment Status* **A**

It is preferred to have the entrace to stats be at the top and flow out the bottom or, if necessary, the sides.

SuggestedRemedy

Re do the layout of the state diagram when it is redrawn for Sponsor Ballot.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Figure 96-6 will be redrawn.

Cl **96** *SC* **96.3.2.3** *P* **43** *L* **4** # 437

Tazebay, Mehmet Broadcom

Comment Type **T** *Comment Status* **A**

In Figure 96-5 ((page 43 lines 4, 13), MII data is shown 2 nibbles of a byte (d0 d0 d1 d1 d2 d2 ...) for 4B3B MII signal conversion but it is not necessary and it should be renumbered (d0 d1 d2 d3 ...).

SuggestedRemedy

Revise the figure 96-6 in order to reflect "d0 d1 d2 d3 ..." instead of "d0 d0 d1 d1 ..". The file 4B3B_MII_conversion_Fig96_5_partB.vsd is attached.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.2.3** *P* **43** *L* **46** # 209

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **A**

Figure 96-6 should use the proper symbol for assignment in all states.
Also it has significant white space to left and right and can therefore be increased in size to avoid using an excessively small font size (in this case 7.5 pt).

SuggestedRemedy

Us proper assignment symbol (see template)
Increase overall size.
Other suggested guidelines for SD's:
Avoid line wrapping by increasing horizontal size of blocks.
Avoid crossing connection lines if possible (it is in Fig 96-6).
Enter states from the top, exit from the bottom

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Figure 96-5 will be redrawn.

Cl **96** *SC* **96.3.2.3.1** *P* **44** *L* **18** # 9

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

Refer to the specific subclause (96.3.2.4.8)

SuggestedRemedy

Change 96.3.2 to 96.3.2.4.8.

Response *Response Status* **W**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.3.2.3.1** *P* **44** *L* **2** # 49

Ran, Adee Intel

Comment Type **E** *Comment Status* **R**

Unlike in clause 40, a variable named "DATA" does not seem to be used anywhere in this draft. It may be omitted.

If not omitted:

Many code-groups are possible as valid data, not just one; should be "a", not "the". Also, refer to the specific subclause (96.3.2.4.5).

SuggestedRemedy

Delete this variable definition, or rephrase if necessary.

Response *Response Status* **C**

REJECT.

DATA is used in 96.3.2.4.10.

Cl **96** *SC* **96.3.2.3.1** *P* **44** *L* **31** # 244

Remein, Duane Huawei Technologies

Comment Type **TR** *Comment Status* **A**

Conflicting times in definition of RAn
"The vector of the correctly aligned most recently received ternary symbols generated by PCS Receive at time n."
Is it the time most recently received or at time n? The latter I would assume

SuggestedRemedy

change to read:
"The vector of the correctly aligned ternary symbols generated by PCS Receive at time n."

Response *Response Status* **W**

ACCEPT.

Cl **96** *SC* **96.3.2.3.1** *P* **44** *L* **33** # 446

Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

In 96.3.2.3.1 (page 44 line 33), "100BT1receive" is being defined but not being used elsewhere in this document. Clause 40 has a similar one named "1000BTreceive" but "receiving" has been defined in this document. Therefore, 100BT1receive" should be removed.

SuggestedRemedy

Remove "100BASET1receive" including the lines 33 to 35 on Page 44.

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.3.2.3.1** *P* **44** *L* **33** # 245

Remein, Duane Huawei Technologies

Comment Type **TR** *Comment Status* **A**

What does this variable mean?
100BT1receive
The receiving parameter generated by the PCS Receive function in 96.3.3
Values: TRUE or FALSE

SuggestedRemedy

Add descriptive text explaining the variable as was done for 100BT1transmit

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Remove "100BASET1receive" including the lines 33 to 35 on Page 44.

Cl **96** *SC* **96.3.2.3.1** *P* **44** *L* **9** # 8

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

Refer to the specific subclause (96.3.2.4.5) here and in ESD2, ESD3.

SuggestedRemedy

Change 96.3.2 to 96.3.2.4.5.

Response *Response Status* **W**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.3.2.3.1** *P* **45** *L* **2** # 470

Tazebay, Mehmet Broadcom

Comment Type **TR** *Comment Status* **A**

The definition for SYMB_2D for "tx_symb_pair" value should be defined.

SuggestedRemedy

Insert ": A pair of ternary transmit symbols. Each of the ternary symbols may take on one of the values {-1, 0, or +1}." after "SYMB_2D".

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy to add definition after line 42.

Cl **96** *SC* **96.3.2.3.1** *P* **45** *L* **7** # 447

Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

2.In 96.3.2.3.1 (page 45 line 7), 100BT1transmit" is being defined but not being used elsewhere in this document. Clause 40 has a similar one named "1000BTtransmit" but it does not apply to 100BASE-T1

SuggestedRemedy

Remove "100BASET1transmit" including lines from 7 to 11 on Page 45.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.2.3.2** *P* **45** *L* **45** # 467

Tazebay, Mehmet Broadcom

Comment Type **TR** *Comment Status* **A**

The "tx_symb_pair" is the correct terminology for the output argument of PCS Transmit process and not "tx_symb_vector". Therefore, it should be changed to "tx_symb_pair"

SuggestedRemedy

Change "tx_symb_vector" to "tx_symb_pair".

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.2.3.2** *P* **45** *L* **45** # 168

Law, David HP

Comment Type **T** *Comment Status* **A**

In the definition of the function ENCODE, which is used in the PCS Transmit State Diagram in Figure 96-6, it is stated that ENCODE follows the rules outlined in 96.3.2.3. The first line of subclause 96.3.2.3 however states that 'The PCS Transmit function shall conform to the PCS Transmit State Diagram in Figure 96-6 ...'. This appears to be somewhat circular, and instead a cross reference to 96.3.2.4 'PCS transmit symbol mapping' where the encoding rules are defined would seem to be better.

SuggestedRemedy

Suggest that the text '... outlined in 96.3.2.3.' should be changed to read '... defined in 96.3.2.4.'.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.2.3.3** *P* **46** *L* **52** # 210

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **R**

Per this description symb_timer_done is a signal with no duration.
"Continuous timer: The condition symb_timer_done becomes true upon timer expiration. Restart time: Immediately after expiration; timer restart resets the condition symb_timer_done."

Same issue existed in symb_pair_timer on next page.

SuggestedRemedy

Change
"Restart time: Immediately after expiration; timer restart resets the condition symb_timer_done."
to read
Restart time: Next clock after expiration; timer restart resets the condition symb_timer_done."

Response *Response Status* **C**

REJECT.

This is similar to Clause 40.3.3.3.

Cl **96** *SC* **96.3.2.3.4** *P* **46** *L* **18** # 462

Tazebay, Mehmet Broadcom

Comment Type **TR** *Comment Status* **A**

There is no need for PUDR as PCS clock is continuously generated by transmit clock TX_TCLK. It should be removed.

SuggestedRemedy

Remove "PUDR" and its definition on lines 18 and 19 on page 46

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.2.3.4** *P* **46** *L* **24** # 464

Tazebay, Mehmet Broadcom

Comment Type **TR** *Comment Status* **A**

"RSPCD" is a timer which belongs to 96.3.2.3.3 and not to 96.3.2.3.4. Therefore, it should be moved to 96.3.2.3.4. Also, the symbol conversion reference should be provided.

SuggestedRemedy

Move "RSPCD
Receive Symbol Pair Converted Done, synchronized with PCS receive clock pcs_rxclk of frequency 33.333 MHz." to 96.3.2.3.3.

Insert "The symbol conversion is as specified in 96.3.3.1." after "... pcs_rxclk of frequency 33.333 MHz."

Response *Response Status* **C**

ACCEPT.

Move "RSPCD
Receive Symbol Pair Converted Done, synchronized with PCS receive clock pcs_rxclk of frequency 33.333 MHz." to 96.3.2.3.3.

Change
"Receive Symbol Pair Converted Done, synchronized with PCS receive clock pcs_rxclk of frequency 33.333 MHz."

To

"Receive Symbol Pair Converted Done, synchronized with PCS receive clock pcs_rxclk of frequency 33.333 MHz. The symbol conversion is as specified in 96.3.3.1."

Cl **96** *SC* **96.3.2.4.10** *P* **50** *L* **1** # 238

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **A**

Interesting colors in Fig 96-8. I have not idea what they mean though.
Note the IEEE Style Manual states: "Color in figures shall not be required for proper interpretation of the information."

SuggestedRemedy

Add key to figure after converting to B&W

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #553.

Cl **96** *SC* **96.3.2.4.10** *P* **50** *L* **20** # 221

Remein, Duane Huawei Technologies

Comment Type **TR** *Comment Status* **R**

If interleaving at the transmitter can be either TA/TB or TB/TA how does the receiver know how to de-interleave? Is there some provisioned parameter that controls this?

SuggestedRemedy

Clarify how the receive knows the proper de-interleaving order.
If the answer to this is something like "See 96.3.3.4 PCS Receive Automatic Polarity Detection" then 96.3.3.4 cannot be optional.

Response *Response Status* **W**

REJECT.

Finding the correct TA/TB or TB/TA order is implementation dependent, and it is different from polarity detection.

Cl **96** *SC* **96.3.2.4.10** *P* **50** *L* **22** # 13

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

"2-D ternary pair" is repetitive. This thing is defined as a "code-group", or alternatively it is a pair of ternary symbols.

This applies to 96.3.3.1.2 too.

SuggestedRemedy

Change "2-D ternary pair" here to "code-groups".

Change "2-D ternary symbols" to "code-groups" three times in the definition of check_idle (96.3.3.1.2)

Response *Response Status* **W**

ACCEPT.

Cl **96** *SC* **96.3.2.4.10** *P* **50** *L* **22** # 173

Law, David HP

Comment Type **T** *Comment Status* **A**

Subclause 96.3.2.4.10 'Generation of symbol sequence' is a subclause of 96.3.2.4 'PCS transmit symbol mapping' and as such shouldn't contain receiver requirements.

SuggestedRemedy

Suggest the text 'The receiver implementation shall de-interleave the sequence accordingly' be deledted from this subclause and moved to sucbaluse of subclause 96.3.3.2 PCS 'Receive symbol decoding'.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.2.4.10** *P* **50** *L* **24** # 404

Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

"DATA" is capitalized and it should be all lower case.

SuggestedRemedy

Change "... The ESD (after one DATA packet) ..." to "... The ESD (after one data packet) ..."

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.2.4.2** *P* **47** *L* **8** # 10

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

"As such" is unsuitable here.

This paragraph also relates to the next subclause (generation of SC_n[2:0]). Only the next paragraph is specific to this subclause.

SuggestedRemedy

Delete "as such".

Consider merging this subclause with 96.3.2.4.3.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Remove "as such".

Reject: merging this subclause with 96.3.2.4.3.

Cl **96** *SC* **96.3.2.4.2** *P* **47** *L* **8** # 211

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **A**

This section states that: "Generation of Syn[2:0] and Scn[2:0] adopts the encoding rules, when applicable, from 40.3.1.3.2." However, Scn is not specified in 40.3.1.3.2, rather it is in 40.3.1.3.3.

SuggestedRemedy

Perhaps you should be referring to Sgn, Sxn, or should also refer to 40.3.1.3.3.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change
"Generation of Syn[2:0] and Scn[2:0] adopts the encoding rules, when applicable, from 40.3.1.3.2."
to
" Generation of Syn[2:0] and Scn[2:0] adopts the encoding rules, when applicable, from 40.3.1.3.2 and 40.3.1.3.3."

Cl **96** *SC* **96.3.2.4.3** *P* **47** *L* **20** # 50

Ran, Adee Intel

Comment Type **E** *Comment Status* **A**

Why separate Sc_n generation into two rules?

SuggestedRemedy

Merge into a single rule for generating Sc_n[2:0].

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Bits Scn[2:0] shall be generated as follows

Scn[2:0] =
[0 0 0] if (tx_mode = SEND_Z)
Syn[2:0] else

Cl **96** *SC* **96.3.2.4.4** *P* **4047** *L* **40** # 246

Remein, Duane Huawei Technologies

Comment Type **TR** *Comment Status* **A**

It is not clear what the symbol "^" means in this context. This symbol is normally used to indicate the first term is raised to the power indicated by the 2nd term. Here I suspect it is meant as a logical XOR as is clearly stated in Cl 40.

SuggestedRemedy

Indicate what the symbol is being used for using a note immediately after each use such as "where ^ denotes the XOR logic operator"

Response *Response Status* **W**

ACCEPT.

Insert the suggested text inline.

Cl **96** *SC* **96.3.2.4.4** *P* **47** *L* **33** # 51

Ran, Adee Intel

Comment Type **E** *Comment Status* **A**

n is a subscripts.

These are the scrambled bits, not scrambling bits.

SuggestedRemedy

Change title to "Generation of scrambled bits Sd_n[2:0]" (_n meaning subscript n).

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.2.4.5** *P* **48** *L* **4** # 191

Remein, Duane Huawei Technologies

Comment Type **ER** *Comment Status* **A**

Use of bold font for TAn, TBn is not appropriate.

SuggestedRemedy

Use character style EquationVariables for this and all other variables embedded in draft text.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Use commentors suggested remedy for all variables embedded in the draft.

Cl **96** *SC* **96.3.2.4.6** *P* **47** *L* **11** # 11

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

Rephrase paragraph for correctness.

The table is confusing. If the (0, 0) ternary pairs is not used in this mode, it should not appear in this table.

SuggestedRemedy

Change "The SSD/ESD ternary pairs are not used for training" to "The ternary pairs used to encode SSD and ESD are not used during training".

Delete the "used for SSD/ESD" line from the table.

Response *Response Status* **W**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.3.2.4.6** *P* **47** *L* **8** # 53

Ran, Adee Intel

Comment Type **E** *Comment Status* **A**

This subclause and the 3 following it should be in a lower hierarchy under 96.3.2.4.5.

SuggestedRemedy

Move in hierarchy.

Response *Response Status* **C**

ACCEPT.

Change "96.3.2.4.6" to "96.3.2.4.5.1".
Change "96.3.2.4.7" to "96.3.2.4.5.2".
Change "96.3.2.4.8" to "96.3.2.4.5.3".
Change "96.3.2.4.9" to "96.3.2.4.5.4".

Consequently, change "96.3.2.4.10" to "96.3.2.4.6"

Cl **96** *SC* **96.3.2.4.6** *P* **48** *L* **17** # 192

Remein, Duane Huawei Technologies

Comment Type **ER** *Comment Status* **A**

In table 96-1 are we to assume TAn and TBn are Ternary A and Ternary B respectively?
Assumptions should not be required in a standard.
Same issue in Tables 96-2 & 96-3

SuggestedRemedy

Change Ternary A and Ternary B to TAn and TBn respectively in all tables.

Response *Response Status* **W**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.3.2.4.6** *P* **48** *L* **25** # 193

Remein, Duane Huawei Technologies

Comment Type **ER** *Comment Status* **A**

Table Style does not match 802.3 Template. Also why is the row starting "Used for SSD/ESD" in tables 96-1 and 96-2 in bold font?

SuggestedRemedy

Convert all tables and table cells to proper style.

Response *Response Status* **W**

ACCEPT.

Cl **96** *SC* **96.3.2.4.8** *P* **48** *L* **50** # 589

Dawe, Piers Mellanox

Comment Type **E** *Comment Status* **R**

Need to do equations per style guide.

SuggestedRemedy

Number the equations.
Explain what's in the equation:
"where Scr is ...
n is ...
and [caret] denotes ...

Response *Response Status* **C**

REJECT.

Scrambler function is sufficiently described in the text and equations. Numbering is not necessary as equations are contained within the subclause.

Cl **96** *SC* **96.3.2.4.8** *P* **49** *L* **9** # 230

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **A**

This equation should be in para style Equation (or possibly EU,EquationUnnumbered) and should be entered using the FrameMaker equation editor

SuggestedRemedy

Use proper Style and Equation Editor

Response *Response Status* **C**

ACCEPT.

Equation will be rewritten in FrameMakers equation editor.

Cl **96** *SC* **96.3.3** *P* **50** *L* **26** # 54

Ran, Adee Intel

Comment Type **E** *Comment Status* **A**

Should this subclause title include "function" as in 96.3.2?

SuggestedRemedy

Change title to "PCS Receive function".

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.3.3.1** *P* **37** *L* **1** # 326

Zimmerman, George — CME Consulting, Inc.

Comment Type **ER** *Comment Status* **A**

Figure 96-9 text is too small to be readable

SuggestedRemedy

Redraw or scale so that font is consistent with 802.3 style and readable.

Response *Response Status* **W**

ACCEPT.

Cl **96** *SC* **96.3.3.1** *P* **50** *L* **34** # 251

Thompson, Geoff — GraCaSI

Comment Type **ER** *Comment Status* **A**

The grammar in this paragraph is pretty bad thus leaving the meaning fuzzy.

SuggestedRemedy

Replace with the following text (which I believe has the correct meaning): A JAB state machine as shown in Figure 96-10 is implemented to prevent any mis-detection of ESD1 and ESD2 that would make the PCS Receive state machine lock up in the DATA state.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change
"To prevent any misdetection of ESD1 and ESD2 that make the PCS Receive state machine locked up in DATA state, a JAB state machine as shown in Figure 96-10 is implemented to make sure the maximum dwelling time in DATA state shall be less than a certain time specified by rcv_max_timer."
to
"A JAB state machine, as shown in Figure 96-10, is implemented to prevent any mis-detection of ESD1 and ESD2 that would make the PCS Receive state machine lock up in the DATA state. The maximum dwelling time in DATA state shall be less than a timer specified by rcv_max_timer."

Cl **96** *SC* **96.3.3.1** *P* **51** *L* **1** # 222

Remein, Duane — Huawei Technologies

Comment Type **TR** *Comment Status* **A**

This state diagram is illegible. The use of 4.5 pt font is not acceptable.
IEEE Style Manual Table 1 states: "Text point size
IEEE-SA uses 8-point type size. All capital letters or mixed uppercase and lowercase letters may be used, depending on the amount of text, as long as the presentation is consistent throughout the document.

SuggestedRemedy

Modify SD to conform to IEEE Style Manual

Response *Response Status* **W**

ACCEPT.

Cl **96** *SC* **96.3.3.1** *P* **51** *L* **1** # 12

Ran, Adee — Intel

Comment Type **ER** *Comment Status* **A**

Text in Figure 96-9 is unreadable even on a large monitor.

SuggestedRemedy

Enlarge font and re-layout diagram if necessary.

Response *Response Status* **W**

ACCEPT.

See response to comment #326.

Cl **96** *SC* **96.3.3.1** *P* **51** *L* **2** # 466

Tazebay, Mehmet — Broadcom

Comment Type **TR** *Comment Status* **A**

i) In Figure 96-9 PCS Receive State Diagram, "RSPCD" should be in the conditions for transitioning to the IDLE and LINK FAILED states.

ii) A few instances of Rxn should be corrected from RXn.

PCS Receive State Diagram is attached.

SuggestedRemedy

Change figure 96.9 as suggested.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.3.1** *P* **51** *L* **3** # 435

Tazebay, Mehmet — Broadcom

Comment Type **T** *Comment Status* **A**

In 96.9 PCS Receive state diagram (lines 3 & 4), link_status needs to revised to "FAIL" since there's no "FALSE" definition.

SuggestedRemedy

Change "link_status = FALSE" to "link_status = FAIL". The file PCS_TX_RC_State_Machine.vsd is attached.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.3.1** *P* **51** *L* **9** # 347

Slavick, Jeff — Avago Technologies

Comment Type **E** *Comment Status* **A**

Two == signs instead of a combined = charcter

SuggestedRemedy

Convert the == into the single wider = sign in the mii_fc_err <== assignment

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.3.3.1** *P* **52** *L* **2** # 443

Tazebay, Mehmet — Broadcom

Comment Type **T** *Comment Status* **A**

11.In 96.3.3.1 (page 52 line 2) Figure 96-10, the pcs_reset is missing for JABIDLE state. The figure needs to be updated. The corrected figure Figure_96_10_JAB_State_Diagram_v2.docx is attached.

SuggestedRemedy

Insert "pcs_reset" in JABIDLE state in Figure 96.10.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.3.1** *P* **52** *L* **22** # 455

Tazebay, Mehmet — Broadcom

Comment Type **E** *Comment Status* **A**

In 96.3.3.1 (page 52 line 22) Figure 96-10, there is a typo in "rcvr_max_timer_done" and it should be "rcv_max_timer_done". The corrected figure Figure_96_10_JAB_State_Diagram_v2.docx is attached.

SuggestedRemedy

Change "rcvr_max_timer_done" to "rcv_max_timer_done"

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.3.1** *P* **52** *L* **33** # 252

Thompson, Geoff — GraCaSI

Comment Type **ER** *Comment Status* **A**

Plurarity mismatch in 2nd sentence.

SuggestedRemedy

Change to one of the following two choices (2nd preferred): a) The received symbol is converted to a 2-D ternary pair (RAn", RBn) first. b) The received symbols are converted to 2-D ternary pairs (RAn," RBn) first."

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change
"The received symbols are converted to 2-D ternary pair"
to
"The received symbols are converted to a 2-D ternary pair"

Cl **96** *SC* **96.3.3.1** *P* **52** *L* **37** # 296

Thompson, Geoff GraCaSI

Comment Type **E** *Comment Status* **A**

Split last sentence in two for clarity

SuggestedRemedy

Change the text: ...error"," that are..." TO: "...error. These", in turn," are..."

Response *Response Status* **C**

ACCEPT.

Change
"The received ternary pairs (RAn, RBn) are decoded to generate signals rx_data[2:0], rx_dv, and rx_error, that are processed through 3B4B conversion to generate signals RXD[3:0], RX_DV and RX_ER at the MII."
to
"The received ternary pairs (RAn, RBn) are
decoded to generate signals rx_data[2:0], rx_dv, and rx_error. These signals are processed through 3B4B conversion to generate signals RXD[3:0], RX_DV and RX_ER at the MII."

Cl **96** *SC* **96.3.3.1.1** *P* **38** *L* **45** # 614

Hidaka, Yasuo Fujitsu Laboratories of

Comment Type **E** *Comment Status* **A**

A period (.) is missing.

SuggestedRemedy

Add a period(.).

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Change
"Any random three-bit outputs are invalid and disregarded"
to
"Any random three-bit outputs are invalid and disregarded."

Cl **96** *SC* **96.3.3.1.1** *P* **52** *L* # 468

Tazebay, Mehmet Broadcom

Comment Type **TR** *Comment Status* **A**

The definition for rx_symb_pair is missing and it should be added.

SuggestedRemedy

Insert "rx_symb_pair

A pair of ternary symbols generated by the PCS Receive function before ternary pair decoding.

Value: SYMB_2D: A pair of ternary receive symbols. Each of the ternary symbols may take on one of the values {-1, 0, or +1}."

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.3.1.1** *P* **52** *L* **45** # 274

Thompson, Geoff GraCaSI

Comment Type **TR** *Comment Status* **A**

How does one tell from the output value if the 3 bits is random" or otherwise?

SuggestedRemedy

Define "random" vs. non-random (I guess) in this context and add as allowed values.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment # 31, definition of INVALID has been changed.

Cl **96** *SC* **96.3.3.1.1** *P* **52** *L* **45** # 31

Ran, Adee Intel

Comment Type **TR** *Comment Status* **A**

INVALID is assigned into rx_data[2:0] in Figure 96-9. How can "any random three-bit output" be identified as invalid? there should either be an unique identifiable code, or a separate variable should flag invalid data.

SuggestedRemedy

A variable to flag the indalid data is suggested.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change
"Any random three-bit outputs are invalid and disregarded"

to

"Three-bit outputs are invalid and disregarded"

Cl **96** *SC* **96.3.3.1.1** *P* **52** *L* **48** # 21

Ran, Adee Intel

Comment Type **T** *Comment Status* **R**

What are the possible values of this parameter and their meanings?

Applies to most of the variables in this list as well.

SuggestedRemedy

List possible values and meaning of each variable.

Response *Response Status* **C**

REJECT.

Comment and suggested resolution are not specific.

Cl **96** *SC* **96.3.3.1.1** *P* **53** *L* **24** # 55

Ran, Adee Intel

Comment Type **E** *Comment Status* **A**

This is a variable, it does not seem to be parameter of any primitive.

SuggestedRemedy

Change "Parameter" to "variable" or delete.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add the following :
"Values:
JABIDLE: IDLE state of JBstate while link is down, or linked but not receiving data.
MONJAB: Jabber monitoring state, start rcv_max_timer.
JAB: Jabber detected state, rcv_max_timer is done and still receiving data. "

Cl **96** *SC* **96.3.3.1.1** *P* **53** *L* **27** # 460

Tazebay, Mehmet Broadcom

Comment Type **ER** *Comment Status* **A**

"RXn " is a typo and it should be "Rxn"

SuggestedRemedy

Change "RXn " to "Rxn ".

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy. Also mentioned in comment 466.

Cl **96** *SC* **96.3.3.1.1** *P* **53** *L* **27** # 224

Remein, Duane — Huawei Technologies

Comment Type **TR** *Comment Status* **A**

RXn
Most recently received symbol pair generated by PCS Receive at time n

I can be the most recently received or the one received at time n but it cannot be both.

SuggestedRemedy

Clarify which it is.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

change "Most recently received symbol pair generated by PCS Receive at time n."

to

"Received symbol pair generated by PCS Receive at time n."

Cl **96** *SC* **96.3.3.1.1** *P* **53** *L* **31** # 17

Ran, Adee — Intel

Comment Type **ER** *Comment Status* **A**

The nominal frequency of pcs_rxclk should appear somewhere else, explicitly, stated as a frequency, not in the definition of a variable.

SuggestedRemedy

Delete ", nominally 33.333 MHz" here. Make it apper explicitly if necessary.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response from comment #16

Cl **96** *SC* **96.3.3.1.1** *P* **53** *L* **33** # 463

Tazebay, Mehmet — Broadcom

Comment Type **TR** *Comment Status* **A**

It is not necessary to define TSPCD (Transmit Symvol Pair Converted Done) as the PCS Transmit symbol pair conversion occurrs on every TX_TCLK. Therefore,
"TSPCD
Transmit Symbol Pair Converted Done, synchronized with PCS transmit clock pc_txclk of frequency 33.333 MHz." should be removed

SuggestedRemedy

On page 53 lines 33,34, and 35, remove "TSPCD" and its definition "Transmit Symbol Pair Converted Done, synchronized with PCS transmit clock pc_txclk of frequency 33.333 MHz."

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.3.3.1.1** *P* **53** *L* **44** # 223

Remein, Duane — Huawei Technologies

Comment Type **TR** *Comment Status* **A**

The following does not describe the variable:
INVALID
Any random three-bit outputs are invalid and disregarded

SuggestedRemedy

Review ALL constants, variables, functions, counters, timers, etc verifying that the description explains the object in a clear and concise way. For those objects without a clear explanation either add one or add an editors note "EDITORS NOTE (to be removed prior to publication); this object is missing a clear and concise explanation."

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #31, definition of INVALID has been changed.

Cl **96** *SC* **96.3.3.1.2** *P* **53** *L* **40** # 253

Thompson, Geoff GraCaSI

Comment Type **ER** *Comment Status* **A**

The 2nd sentence of this paragraph is too long and is unparsable.

SuggestedRemedy

Fix. I can't figure out appropriate text.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change

“The check_idle function operates on the current 2-D ternary symbols after de-interleaving rx_symb_vectors and the next five 2-D ternary symbols after de-interleaving rx_symb_vectors available via PMA_UNITDATA.indication and returns a Boolean value indicating whether the six consecutive 2-D ternary symbols after de-interleaving rx_symb_vectors contain symbols corresponding to the idle mode encoding or not, as specified in 96.3.2.”

to

“The check_idle function operates on six consecutive 2-D ternary symbols after de-interleaving rx_symb_vectors. The check_idle function then returns a Boolean value indicating if these six consecutive symbols are idle symbols, as specified in 96.3.2.”

Cl **96** *SC* **96.3.3.1.2** *P* **53** *L* **40** # 14

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

Most if not all groups of 6 ternary symbols (or 3 code-groups) will _contain_ symbols corresponding to the idle mode.

The discrimination should be made according to symbols that are allowed only in data mode.

Also, refer to the specific subclause.

SuggestedRemedy

Change

"indicating whether the six consecutive 2-D ternary symbols after de-interleaving rx_symb_vectors contain symbols corresponding to the idle mode encoding or not, as specified in 96.3.2"

to

"indicating whether or not all six consecutive code-groups after de-interleaving rx_symb_vectors are valid in idle mode encoding"

or (inverted logic):
"indicating whether or not the six consecutive code-groups after de-interleaving rx_symb_vectors contain symbols that are invalid in idle mode encoding".

Refer to 96.3.2.4.5.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change
"indicating whether the six consecutive 2-D ternary symbols after de-interleaving rx_symb_vectors contain symbols corresponding to the idle mode encoding or not, as specified in 96.3.2"

to

"indicating whether or not all six consecutive code-groups after de-interleaving rx_symb_vectors are valid in idle mode encoding, as specified in 96.3.2.4.5."

Cl **96** *SC* **96.3.3.1.2** *P* **53** *L* **48** # 469

Tazebay, Mehmet — Broadcom

Comment Type **TR** *Comment Status* **A**

The "rx_symb_pair" is the correct terminology for the input argument of PCS Receive process and not "rx_symb_vector". Therefore, it should be changed to "rx_symb_pair"

SuggestedRemedy

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change
"rx_symb_vector"
to
"rx_symb_pair"

Cl **96** *SC* **96.3.3.1.2** *P* **53** *L* **50** # 32

Ran, Adee — Intel

Comment Type **TR** *Comment Status* **A**

Where are the decoding rules outlined? Sould be 96.3.3.2, but nothing is really outlined there.

SuggestedRemedy

Point to 96.3.3.2, and write the decoding rules clearly there.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change
“in 96.3.3.1”
to
“in 96.3.3.2”

Delete
“The PCS Receive function accepts received symbols provided by PMA Receive function.”

Move
“The received symbols are converted to a 2-D ternary pair (RAn, RBn) first. To achieve correct operation, PCS Receive uses the knowledge of the encoding rules that are employed in the idle mode. PCS Receive generates the sequence of symbols and indicates the reliable acquisition of the descrambler state by setting the parameter scr_status to OK. The received ternary pairs (RAn, RBn) are decoded to generate signals rx_data[2:0], rx_dv, and rx_error, that are processed through 3B4B conversion to generate signals RXD[3:0], RX_DV and RX_ER at the MII.”
to the end of paragraph on page 54 line 15.

Cl **96** *SC* **96.3.3.1.3** *P* **40** *L* **4** # 334

Zimmerman, George — CME Consulting, Inc.

Comment Type **TR** *Comment Status* **A**

Notation - is 36K +/- 1.8K 36*1024 +/- 1.8*1024 or is it * 1000?

SuggestedRemedy

write out numbers (e.g., 36000 +/- 1800)

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See the response to comment #33 for the updated rcv_max_timer definition.

Cl **96** *SC* **96.3.3.1.3** *P* **54** *L* **3** # 239

Remein, Duane — Huawei Technologies

Comment Type **T** *Comment Status* **A**

Expires after counting 36K (+/- 1.8K) pcs_rxclk clock cycles.
Most digital timers do not require a precision. Why can't this simply be 36k?

SuggestedRemedy

If the +/- is required convert it to the proper symbol (see current template).

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 33.

Cl **96** *SC* **96.3.3.1.3** *P* **54** *L* **4** # 33

Ran, Adee Intel

Comment Type **TR** *Comment Status* **A**

Is "K" a thousand, or 1024? This an unusual style.

Timers are usually specified in time units, otherwise they are counters.

SuggestedRemedy

Use plain numbers.

Preferably, define the appropriate period explicitly.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change "Expires after counting 36K (+/- 1.8K) pcs_rxclk clock cycles."
to
"A timer used to determine the maximum amount of time the PHY Receive state machine stays in DATA state. The timer shall expire 1.08 ms +- 54µs after being started. The condition rcv_max_timer_done becomes true upon timer expiration."

Cl **96** *SC* **96.3.3.2** *P* **54** *L* **18** # 34

Ran, Adee Intel

Comment Type **TR** *Comment Status* **A**

This is a normative statement, but the requirement is unclear.

SuggestedRemedy

Either delete "shall" or clarify what it is that the receiver must do.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change
"When PMA Receive indicates normal operations and sets loc_rcvr_status = OK, the PCS Receive function shall check
the symbol sequences and search for SSD or receive error indicator."

to

"When PMA Receive indicates normal operations and sets loc_rcvr_status = OK, the PCS Receive function checks
the symbol sequences and searches for SSD or receive error indicator.

Cl **96** *SC* **96.3.3.4** *P* **40** *L* **42** # 225

Remein, Duane Huawei Technologies

Comment Type **TR** *Comment Status* **R**

802.3 prides itself on it's reputation as a "plug & play" technology. The required provisioning of MASTER/SLAVE will interfere with this functionality. If two PHYs provisioned both as MASTER or both as SLAVE are connected they will not operate correctly.
In all previous 802.3 PHY that I am aware of the MASTER/SLAVE relationship, if required, was either negotiated or very obvious (as in PON where the CLT is the master and all ONUs are slaves).
How will you prevent fault conditions due to misconfiguration of MASTER/SLAVE?

SuggestedRemedy

Add negotiable MASTER/SLAVE functionality.

Response *Response Status* **C**

REJECT.

This type of network does not have "plug & play" functionality, it is a pre-configured embedded network.

Cl **96** *SC* **96.3.3.4** *P* **54** *L* **32** # 297

Thompson, Geoff GraCaSI

Comment Type **E** *Comment Status* **A**

The words as an optional feature" are redundant (per the heading) and not necessary to the this text. They just make the sentence that much more difficult to parse.

SuggestedRemedy

Delete the words: "as an optional feature" from the first sentence.

Response *Response Status* **C**

ACCEPT.

Change
"During training, the automatic polarity detection can be done in PCS Receive as an optional feature with proper decoding procedures."
to
"During training, the automatic polarity detection may be done in PCS Receive with proper decoding procedures."

Cl **96** *SC* **96.3.3.4** *P* **54** *L* **33** # 35

Ran, Adee Intel

Comment Type **TR** *Comment Status* **A**

incorrect cross reference text.

SuggestedRemedy

Change "dle Idle symbol mapping in training" to "table 96-1".

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Use commentors suggested remedy to fix the cross reference. In title of Table 96-1, remove strikethrough text "dle" and remove underline from "Idle"

Cl **96** *SC* **96.3.3.4** *P* **54** *L* **42** # 15

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

"half-duplex" and "full duplex" are not defined anywhere, and are only used here. This paragraph is not clear at all.

SuggestedRemedy

Rewrite this paragraph using well-defined terms.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change:

"Given the two-step link up process for 100BASE-T1 PHYs, a half-duplex step and a full duplex step, polarity detection and correction can be done simultaneously at the earliest stage. Link up starts with the half duplex step when only the MASTER PHY sends symbols to the SLAVE PHY. During this initial stage, all hand-shaking signal status, such as rem_rcvr_status, shall be known as FALSE. With this a priori knowledge, polarity should be accurately detected by the
SLAVE side during the half duplex step. If a polarity flip is detected, the SLAVE changes the sign of its received signals (RAn, RBn) to correct the polarity. Furthermore, it also changes the sign of its transmitted signals (TAn, TBn). When the SLAVE PHY starts sending symbols to the MASTER PHY during the full duplex step, since polarity correction has been taken care of by the SLAVE PHY, the polarity would always be observed as correct by the MASTER PHY."

to:

"Polarity detection and correction can be done simultaneously at the earliest link up stages. Link up starts with the MASTER PHY sending symbols to the SLAVE PHY. During this initial stage, all hand-shaking signal status, such as rem_rcvr_status, shall be known as FALSE. With this a prior knowledge, polarity should be accurately detected by the SLAVE side. If a polarity flip is detected, the SLAVE changes the sign of its received signals (RAn, RBn) to correct the polarity. Furthermore, it also changes the sign of its transmitted signals (TAn, TBn). Since polarity correction has been taken care of by the SLAVE PHY, the polarity would always be observed as correct by the MASTER PHY."

Cl **96** *SC* **96.3.3.4** *P* **55** *L* **1** # 16

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

"shall" and "could" should be avoided here.

pcs_rxclk frequency stated here is only the nominal value. This value should not be used in a normative statement.

SuggestedRemedy

Change "shall be" to "are".

Change the first "could be" to "may be".

Change the second "could be" to "may be".

Delete the frequency value. Possibly, specify the division factor from RX_CLK instead.

Response *Response Status* **W**

ACCEPT.

Cl **96** *SC* **96.3.3.4** *P* **55** *L* **7** # 36

Ran, Adee Intel

Comment Type **TR** *Comment Status* **A**

rx_data stream is theoretically infinite. Does this refer to the number of bits in a frame?

SuggestedRemedy

Clarify.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change
"If the number of bits from the rx_data stream in pcs_rxclk domain is not a multiple of four, the residual bits are actually the stuff bits appended during 4B3B conversion at the transmitter side."

to

"If the number of bits from the received data frame in pcs_rxclk domain is not a multiple of four, the residual bits are actually the stuff bits appended during 4B3B conversion at the transmitter side."

Cl **96** *SC* **96.3.3.4** *P* **55** *L* **9** # 56

Ran, Adee Intel

Comment Type **E** *Comment Status* **R**

Normative statements do not seem necessary here.

SuggestedRemedy

Change first "shall be" to "are", and second to "is".

Response *Response Status* **C**

REJECT.

Cl **96** *SC* **96.4** *P* **55** *L* **44** # 405

Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

In 96.4 (page 55 line 44-48), the statement suggests a time domain template for the 100BASE-T1 PHY but as the TX PSD is defined rather than a template, the statement must be revised.

SuggestedRemedy

Change "..PAM3 which is a voltage..." to "... PAM3 which is an amplitude ..."

Change "3 discrete differential voltage levels [-1, 0, +1] volts." to "3 discrete differential signal levels [-1, 0, +1].".

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.4** *P* **55** *L* **44** # 105

Ran, Adee Intel

Comment Type **T** *Comment Status* **A**

Paragraph style needs improvement.

PMA works in both directions, data is both incoming and outgoing.

PAM3 usage is repeated twice, the second time looks like a definition.

Signaling is not just between MDI/PMA, it goes over the medium too.

Some electrical specification is embedded here, but there is a separate electrical subclause.

The sentence "The PMA sublayer functions apply to the use of single channel operation" doesn't really say anything.

SuggestedRemedy

Rewrite based on similar existing PMA clauses, for example 40.4.

Move any electrical specification (e.g. voltage levels) to 96.6.

Delete the sentence "The PMA sublayer functions apply to the use of single channel operation."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change
"The PMA provides the interface between the PCS and MDI for the 100BASE-T1 PHY. The primary role of the PMA is to transmit and receive the incoming data stream coming to and from the MDI via PAM3 which is a voltage dependent signaling between MDI/PMA. The PMA uses 3-level Pulse Amplitude Modulation (PAM3) which outputs 3 discrete differential voltage levels [-1, 0, +1] volts."
to
"The PMA couples messages from the PMA service interface specified in 96.2.2 onto the 100BASE-T1 physical medium, and provides the link management and PHY Control functions. The PMA provides full duplex communcations employing to and from medium using 3-level Pulse Amplitude Modulation (PAM3). The interface between PMA and the baseband medium is the Medium Dependent Interface (MDI), which is specified in 96.8"

Cl **96** *SC* **96.4** *P* **55** *L* **50** # 298

Thompson, Geoff GraCaSI

Comment Type **E** *Comment Status* **A**

The text about single channel operation" seems strangely out of place here. There isn't a hint of anything other than single channel operation in the entire clause. I believe that the text is unecessary for a baseband PHY.

SuggestedRemedy

Remove the sentence: "The PMA sublayer functions apply to the use of single channel operation."

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.4** *P* **56** *L* **46** # 240

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **A**

The following statement will not be testable in most implementation and is probably wrong. "The PMA uses 3-level Pulse Amplitude Modulation (PAM3) which outputs 3 discrete differential voltage levels [-1, 0, +1] volts."
Must the differential voltage be -1V or 0V or +1V? Wouldn't -3V, 0V and +3V work? In most cases won't this will be internal to an asic and will probably be two digital bits assuming the value of 01 00 and 10, possibly with 11 == 00?

SuggestedRemedy

Change to read:
"The PMA uses 3-level Pulse Amplitude Modulation (PAM3) which outputs 3 discrete outputs represented by [-1, 0, +1]."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 405.

Cl **96** *SC* **96.4.1** *P* **56** *L* **3** # 241

Remein, Duane — Huawei Technologies

Comment Type **T** *Comment Status* **A**

Reference to 40.3.1.1 should probably be 40.4.2.1.
Also no "conditional LPI reference" could be found

SuggestedRemedy

Change ref per comment, clarify what is meant by conditional LPI reference.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change
"This function adopts 40.3.1.1 without any exceptions, noting that the 36.2.5.1.3 reference is valid and conditional LPI
reference is not used."
to
"This function adopts 40.4.2.1 without any exceptions, noting that the 36.2.5.1.3 reference is valid and optional LPI reference is not used."

Cl **96** *SC* **96.4.2** *P* **43** *L* **9** # 615

Hidaka, Yasuo — Fujitsu Laboratories of

Comment Type **E** *Comment Status* **A**

In Figure 96-13, PMA_UNITDATA_request should be PMA_UNITDATA.request.

SuggestedRemedy

Change it with PMA_UNITDATA.request.

Response *Response Status* **C**

ACCEPT.

Change
"PMA_UNITDATA_request"
to
"PMA_UNITDATA.request"

Cl **96** *SC* **96.4.2** *P* **57** *L* **18** # 449

Tazebay, Mehmet — Broadcom

Comment Type **E** *Comment Status* **A**

"Config" should start with lower case letter 'c' as "config".

SuggestedRemedy

Change "Config" to "config"

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.4.2** *P* **57** *L* **18** # 69

Ran, Adee — Intel

Comment Type **E** *Comment Status* **A**

Style manual: "will" is deprecated, is only used in statements of fact.

SuggestedRemedy

Change "will set" to "sets".

Change "will source" to "derives", twice.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.4.2** *P* **57** *L* **20** # 299

Thompson, Geoff — GraCaSI

Comment Type **E** *Comment Status* **A**

In the 3rd line of the paragraph the term signals" should be singular.

SuggestedRemedy

In the 3rd line change "signals" to "signal".

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.4.3** *P* **57** *L* **33** # 106

Ran, Adee Intel

Comment Type **T** *Comment Status* **A**

Signals aren't ternary, they are continuous.

SuggestedRemedy

Change "ternary PAM signals" to "PAM3 modulated signals"

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.4.3** *P* **57** *L* **34** # 70

Ran, Adee Intel

Comment Type **E** *Comment Status* **A**

typo

SuggestedRemedy

change PMA_UNIDATA to PMA_UNITDATA.

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.4.3** *P* **57** *L* **34** # 242

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **A**

The text states: "The 100BASE-T1 PMA Receive function comprises a single receiver (PMA Receive) for ternary PAM signals on a single
wire, BI_DA"
However Figure 96-14 implies two wires BI_DA+ and BI_DA-

SuggestedRemedy

Make the text and figure agree.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change
"The 100BASE-T1 PMA Receive function comprises a single receiver (PMA Receive) for ternary PAM signals on a single
wire, BI_DA"

to

"The 100BASE-T1 PMA Receive function comprises a single receiver (PMA Receive) for ternary PAM signals on a single
balanced twisted-pair, BI_DA"

Cl **96** *SC* **96.4.3** *P* **57** *L* **39** # 71

Ran, Adee Intel

Comment Type **E** *Comment Status* **A**

loc_rcv_status is a variable, not a primitive.

SCR_STATUS should be renamed to the primitive name PMA_SCRSTATUS.request.

Scrambler or descrambler?

Long sentences have awkward clause order. Rephrasing suggested.

SuggestedRemedy

Change

"This primitive conveys to the PCS Transmiter, PCS Receiver, PMA PHY Control function and Link Monitor the information on whether the status of the overall received link is ok or not. PMA_SCRSTATUS.request is generated by the PCS Receiver to communicate the status of the descrambler for the local PHY. It conveys the information on whether the scrambler has achieved synchronization or not to the PMA receive function."

to

"This variable conveys the information on whether the status of the overall received link is ok or not to the PCS Transmiter, PCS Receiver, PMA PHY Control function and Link Monitor. PMA_SCRSTATUS is generated by the PCS Receiver to communicate the status of the descrambler for the local PHY. It conveys the information on whether the descrambler has achieved synchronization or not to the PMA receive function."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change
"This primitive conveys to the PCS Transmiter, PCS Receiver, PMA PHY Control function and Link Monitor the information on whether the status of the overall received link is ok or not. PMA_SCRSTATUS.request is generated by the PCS Receiver to communicate the status of the descrambler for the local PHY. It conveys the information on whether the scrambler has achieved synchronization or not to the PMA receive function."
to
"This variable conveys the information to the PCS Transmiter, PCS Receiver, PMA PHY Control function and Link Monitor whether the status of the overall received link is ok or not. scr_status is generated by the PCS Receiver to indicate the status of the descrambler to the local PHY. It conveys the information on whether the scrambler has achieved synchronization or not to the PMA receive function."

Cl **96** *SC* **96.4.3** *P* **57** *L* **40** # 459

Tazebay, Mehmet Broadcom

Comment Type **ER** *Comment Status* **A**

"SCR_STATUS" should be all lower case "scr_status".

SuggestedRemedy

Change "SCR_STATUS" to "scr_status".

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.4.3** *P* **58** *L* **7** # 72

Ran, Adee Intel

Comment Type **E** *Comment Status* **R**

scr_status is not defined. Primitive is PMA_SCRSTATUS.request.

SuggestedRemedy

change scr_status to PMA_SCRSTATUS.request.

Response *Response Status* **C**

REJECT.

scr_status is defined on page 61, line 37.

Cl **96** *SC* **96.4.4** *P* **44** *L* **26** # 335

Zimmerman, George — CME Consulting, Inc.

Comment Type **TR** *Comment Status* **A**

Figure 96-15 doesn't "illustrate" the PHY control, it is the PHY control state diagram. The requirement to comply with the state machine is missing as a result of this language.

same thing for link monitor state machine 96-16.

SuggestedRemedy

Insert, "PHY Control shall comply with the state diagram description given in Figure 96–15."
(same for link monitor, Figure 96-16, on page 46, line 40)

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change "Figure 96-15 illustrates the 100BASE-T1 PHY Control."
to
"PHY Control shall comply with the state diagram shown in Figure 96-15."

Change "In FORCE mode, Link Monitor State diagram supports the 100BASE-T1 PHY Control operation."
to
"Link Monitor operation as shown in state diagram of Figure 96-16, shall be provided to support PHY Control ."

Cl **96** *SC* **96.4.4** *P* **45** *L* **1** # 480

Mitsuru, Iwaoka — Yokogawa Electric Co

Comment Type **E** *Comment Status* **A**

There is a non-defined term "BroadR-Reach" in the Figure 96-15.

SuggestedRemedy

Replace "BroadR-Reach" with "100BASE-T1" in the Figure 96-15.

Response *Response Status* **C**

ACCEPT.

See response to comment 577.

Cl **96** *SC* **96.4.4** *P* **45** *L* **22** # 340

Zinner, Helge — Robert Bosch GmbH

Comment Type **E** *Comment Status* **R**

Line: 22,23,34
some items marked with '*' but '*' is not explained on this page

SuggestedRemedy

explain the meaning of '*'

Response *Response Status* **C**

REJECT.

"*" is an IEEE accepted notation repesenting the logical "AND" operation.

Cl **96** *SC* **96.4.4** *P* **45** *L* **5** # 637

Hidaka, Yasuo — Fujitsu Laboratories of

Comment Type **T** *Comment Status* **A**

BroadR-Reach is not understandable.

SuggestedRemedy

Provide a definition of BroadR-Reach, or change the term.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 577.

Cl **96** *SC* **96.4.4** *P* **45** *L* **5** # 406

Tazebay, Mehmet — Broadcom

Comment Type **E** *Comment Status* **A**

Figure 96-15 PHY Control State Diagram, "BroadR-Reach" should be removed.

SuggestedRemedy

Remove "BroadR-Reach" in Figure 96-14. The file Phycontrolstatediagram_fig96_15.vsd is attached.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.4.4** *P* **45** *L* **5** # 577

Wu, Peter Marvell

Comment Type **ER** *Comment Status* **A**

remove BroadR-Reach references

SuggestedRemedy

delete multiple instances of BroadR-Reach in Clause 96

Response *Response Status* **C**

ACCEPT.

Change all instances of "BroadR-Reach" to "100BASE-T1".

Cl **96** *SC* **96.4.4** *P* **45** *L* **6** # 341

Zinner, Helge Robert Bosch GmbH

Comment Type **E** *Comment Status* **A**

Brand name 'BroadR-Reach' should be removed

SuggestedRemedy

change name to 100BASE-T1

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 577.

Cl **96** *SC* **96.4.4** *P* **58** *L* **21** # 73

Ran, Adee Intel

Comment Type **E** *Comment Status* **A**

FORCE mode, undefined, used twice in the first two sentences. It doesn't clarify anything, and the text is more readable without it.

Also, "normal state" is elsewhere defined as a mode.

SuggestedRemedy

Delete "FORCE mode is used to achieve link acquisition between two 100BASE-T1 link partners. During FORCE mode,"

Change "in a normal state" to "in the normal mode".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #132 for FORCE mode definition.

Change
"in a normal state"
to
"in the normal mode".

Cl **96** *SC* **96.4.4** *P* **58** *L* **23** # 430

Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

It is necessary to include the speed information when mentioning the mode operation in this statement.

SuggestedRemedy

Insert "in 100 Mb/s" after "... into the mode of operation"

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.4.4** *P* **59** *L* **5** # 185

Remein, Duane — Huawei Technologies

Comment Type **E** *Comment Status* **A**

Shades of past sins; "DISABLE BroadR-Reach TRANSMITTER"

SuggestedRemedy

suggest just "DISABLE TRANSMITTER"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #577.

Cl **96** *SC* **96.4.4** *P* **59** *L* **5** # 254

Thompson, Geoff — GraCaSI

Comment Type **ER** *Comment Status* **A**

State name uses a proprietary trademark unnecessarily

SuggestedRemedy

Change state name from: DISABLE BroadR-Reach TRANSMITTER" TO: "DISABLE TRANSMITTER"

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment 577.

Cl **96** *SC* **96.4.5** *P* **46** *L* **23** # 342

Zinner, Helge — Robert Bosch GmbH

Comment Type **E** *Comment Status* **R**

Line: 23,33
some items marked with '*' but '*' is not explained on this page

SuggestedRemedy

explain the meaning of '*'

Response *Response Status* **C**

REJECT.

See response to comment 340.

Cl **96** *SC* **96.4.5** *P* **60** *L* **38** # 75

Ran, Adee — Intel

Comment Type **E** *Comment Status* **R**

FORCE mode is not defined anywhere. This paargraph doesn't seem to add any information.

SuggestedRemedy

Delete "FORCE mode is used to set link_control to ENABLE during the PHY initialization. In FORCE mode, Link Monitor State diagram supports the 100BASE-T1 PHY Control operation."

Response *Response Status* **C**

REJECT.

See response to comment #132 for definition of FORCE mode. The paragraph is necessary.

Cl **96** *SC* **96.4.7** *P* **61** *L* **11** # 74

Ran, Adee — Intel

Comment Type **E** *Comment Status* **A**

What does the link_control variable mean or do? help the reader.

"Set by default" to what value? why should that be mentioned for this variables and not for others?

SuggestedRemedy

Add a meaningful description.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add
"This variable is defined in Clause 28.2.6.2." to the end of the sentence.

Cl **96** *SC* **96.4.7** *P* **61** *L* **15** # 107

Ran, Adee Intel

Comment Type **T** *Comment Status* **A**

Doesn't link_status convey the status of the link (not just the medium?) What if the medium is OK but link partner is powered down?

SuggestedRemedy

Change to a correct description.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change
"underlying medium"
to
"link".

Cl **96** *SC* **96.4.7** *P* **61** *L* **20** # 76

Ran, Adee Intel

Comment Type **E** *Comment Status* **A**

"link" can't be split to "receive link" and "transmit link" (see definition in 1.4.235).

loc_rcvr_status is related to the receive function.

Similarly for rem_rcvr_status.

SuggestedRemedy

Change "receive link" to "receive function" here and in line 31.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.4.7** *P* **61** *L* **40** # 108

Ran, Adee Intel

Comment Type **T** *Comment Status* **A**

Is EEE supported by this PHY? seems like an inheritance from another clause.

SuggestedRemedy

Delete "Note that when the PHY supports the optional EEE capability and signal_detect is FALSE, scr_status is set to NOT_OK."

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.4.7.1** *P* **61** *L* **5** # 243

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **A**

The variable config appears to have two definitions, here and in 96.3.2.3.1.
Same is true for tx_enable, & tx_mode

SuggestedRemedy

In all cases define the variable once and ref. the definition in the second location.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove definition of "config", "tx_enable", and "tx_mode" from 96.4.7.1.

Cl **96** *SC* **96.4.7.2** *P* **48** *L* **7** # 584

Wu, Peter Marvell

Comment Type **TR** *Comment Status* **A**

The requirement for link up time is 100ms as defined in 1.4.x PHY initialization, page 4, line 32, But maxwait_timer is still defined as "The timer shall expire 1406 ms +- 18 ms if config = MASTER or 656 ms +-9 ms if config = SLAVE."

SuggestedRemedy

The timer should expire TBD ms (smaller than 100ms) if config = MASTER or TBD (smaller than 100ms) if config =SLAVE.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The timer must expire > 100ms to allow for the maximum startup time.

Change
"The timer shall expire 1406 ms +- 18 ms if config = MASTER or 656 ms +-9 ms if config = SLAVE."

to

"The timer shall expire after 200 ms +- 2 ms."

Cl **96** *SC* **96.4.7.2** *P* **48** *L* **7** # 602

Dai, Shaoan — Marvell

Comment Type **TR** *Comment Status* **A**

The requirement for link up time is 100ms as defined in 1.4.x PHY initialization, page 4, line 32, But maxwait_timer is still defined as "The timer shall expire 1406 ms +- 18 ms if config = MASTER or 656 ms +-9 ms if config = SLAVE

SuggestedRemedy

The timer should expire TBD ms (smaller than 100ms) if config = MASTER or TBD (smaller than 100ms) if config =SLAVE.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response top comment #584.

Cl **96** *SC* **96.4.7.2** *P* **48** *L* **8** # 616

Hidaka, Yasuo — Fujitsu Laboratories of

Comment Type **E** *Comment Status* **A**

The indentation is not good.

SuggestedRemedy

Fix the indentation.

Response *Response Status* **C**

ACCEPT.

Will fix indentation.

Cl **96** *SC* **96.5** *P* **62** *L* **25** # 450

Tazebay, Mehmet — Broadcom

Comment Type **E** *Comment Status* **A**

"EMC Requirements" should change to "EMC Tests" as the requirements are OEM specific and the purpose of this section is to give information about specific tests which are being conducted by OEMS.

SuggestedRemedy

Change "EMC Requirements" to "EMC Tests"

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.5.1** *P* **48** *L* **25** # 578

Wu, Peter — Marvell

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

sections 96.5.1 EMC Requirements, 96.5.1.1 Immunity --- DPI test and 96.5.1.2 Emission --- 150Ohm conducted emission test while the PMA is related, these are tests of the complete solution including the MDI not the PMA

SuggestedRemedy

These sections should be placed in 96.8 MDI Specification or as a new stand alone section.

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **96** *SC* **96.5.1** *P* **62** *L* **28** # 226

Remein, Duane — Huawei Technologies

Comment Type **TR** *Comment Status* **A**

This EMC requirement is way to vague; what are the EMC requirements for automotive applications?
Systems containing a 100BASE-T1 Ethernet PHY shall be able to meet the Electromagnetic Compatibility (EMC) requirements of the automotive applications.

SuggestedRemedy

Add a reference to an external specification or include a full specification in this draft.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change
"Systems containing a 100BASE-T1 Ethernet PHY shall be able to meet the Electromagnetic Compatibility (EMC) requirements of the automotive applications. In CISPR 25, test methods have been defined to measure the EMC performance of the PHY in terms of RF immunity and RF emission."

to

"A system integrating the 100BASE-T1 PHY shall comply with applicable local and national codes, or as agreed between customer and supplier, for the limitation of electromagnetic interference. CISPR 25 test methods have been defined to measure the EMC performance of the PHY in terms of RF immunity and RF emission."

Note: "or as agreed between customer and supplier" verbage is copied from ISO6722.

Cl **96** *SC* **96.5.1** *P* **62** *L* **28** # 109

Ran, Adee Intel

Comment Type **T** *Comment Status* **A**

"shall be able to meet" is unneccesarily open for interpretation. A normative statement is "shall meet".

SuggestedRemedy

Delete "be able to".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #226.

Cl **96** *SC* **96.5.1** *P* **62** *L* **28** # 275

Thompson, Geoff GraCaSI

Comment Type **TR** *Comment Status* **A**

The first sentence has a shall" requirement with non-specified"," generalized requirement. There is no way to respond to a PICs entry for this "shall".

SuggestedRemedy

Either remove the "shall" and say instead that it "is intended to meet" the requirement or provide a very specific test reference that constitutes the complete and specific testable requirements.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #226 for changed text.

Cl **96** *SC* **96.5.1.1** *P* **48** *L* **37** # 595

Dawe, Piers Mellanox

Comment Type **TR** *Comment Status* **A**

This says "The Direct Power Injection (DPI) test method according to IEC62132-4 shall be used to measure..." but 802.3 is not a test spec. Any "shall" must be applied to the interface under test, not to the test itself. There is no requirement to do the test, only to comply with the criterion it would measure, if carried out. Also, what constitutes a pass?

SuggestedRemedy

This should say something like:
The sensitivity of the PMA's receiver to radiofrequency CM RF noise shall [some criterion, e.g. be more than x dBm, or comply with Class X in the test method] if measured according to the Direct Power Injection (DPI) method of IEC 62132-4.

Note no "DUT". We don't specify devices, we specify interfaces, with everything behind them, not just the PMA. Is an IC spec suitable for specifying an equipment anyway?

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change
"The Direct Power Injection (DPI) test method according to IEC62132-4 shall be used to measure the sensitivity of the DUT's PMA receiver to radiofrequency CM RF noise."

to

"The sensitivity of the PMA's receiver to radiofrequency CM RF noise shall be tested according to the Direct Power Injection (DPI) method of IEC 62132-4, and comply with test limits agreed between customer and supplier."

Cl **96** *SC* **96.5.1.1** *P* **48** *L* **42** # 596

Dawe, Piers — Mellanox

Comment Type **TR** *Comment Status* **A**

This says "The 150Ohm test method according to IEC61967-4 shall be used to measure..." but 802.3 is not a test spec. Any "shall" must be applied to the interface under test, not to the test itself. There is no requirement to do the test, only to comply with the criterion it would measure, if carried out. Also, what constitutes a pass?

SuggestedRemedy

This should say something like:
The emission of the PMA transmitter to its electrical environment shall [some criterion, e.g. be less than x dBm, or comply with Class X in the test method] if measured according to the 1 ohm/150 ohms direct coupling method of IEC 61967-4.

Note no "DUT". We don't specify devices, we specify interfaces, with everything behind them, not just the PMA. Is an IC spec suitable for specifying an equipment anyway?

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change
"The 150Ohm test method according to IEC61967-4 shall be used to measure the emission of the DUT's PMA transmitter to its electrical environment."

to

"The emission of the PMA transmitter to its electrical environment shall be tested according to the 150Ohm direct coupling method of IEC61967-4, and comply with test limits agreed between customer and supplier."

Cl **96** *SC* **96.5.1.1** *P* **62** *L* **32** # 276

Thompson, Geoff — GraCaSI

Comment Type **TR** *Comment Status* **A**

This is not an actual test specification. Test specifications have parametric values. This only calls out test method information.

SuggestedRemedy

Add the parametric value/limit that is to be used by the test as the pass/fail limit, either directly or by reference.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #595 for changed text.

Cl **96** *SC* **96.5.1.1** *P* **62** *L* **37** # 79

Ran, Adee — Intel

Comment Type **T** *Comment Status* **R**

Immunity requirement is already normative from parent subclause, and this is not a test specification.

SuggestedRemedy

Change "shall be" to "is".

Response *Response Status* **C**

REJECT.

See response to comment #595.

Cl **96** *SC* **96.5.1.2** *P* **62** *L* **39** # 77

Ran, Adee — Intel

Comment Type **E** *Comment Status* **R**

Space before unit, and unit symbols should be Omega, in heading and text.

SuggestedRemedy

Change "150Ohm" to "150 {Omega sign}" twice.

Response *Response Status* **C**

REJECT.

"150Ohm" is the title of the test method defined in IEC61967-4.

Cl **96** *SC* **96.5.1.2** *P* **62** *L* **40** # 277

Thompson, Geoff — GraCaSI

Comment Type **TR** *Comment Status* **A**

This is not an actual test specification. Test specifications have parametric values. This only calls out test method information.

SuggestedRemedy

Add the parametric value/limit that is to be used by the test as the pass/fail limit, either directly or by reference.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #596 for changed text.

Cl **96** *SC* **96.5.1.3** *P* **62** *L* **45** # 186

Remein, Duane — Huawei Technologies

Comment Type **E** *Comment Status* **A**

It is not clear to me what Tx clock freq has to do with EMC

SuggestedRemedy

Change to L3 header

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 78.

Cl **96** *SC* **96.5.1.3** *P* **62** *L* **45** # 78

Ran, Adee — Intel

Comment Type **E** *Comment Status* **A**

TX clock frequency is specified in 96.5.4.5, this is a duplicate in an odd hierarchy (EMC requirements).

SuggestedRemedy

Delete subclause 96.5.1.3.

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.5.1.3** *P* **62** *L* **48** # 255

Thompson, Geoff — GraCaSI

Comment Type **ER** *Comment Status* **R**

The spec is not for a transmission" but rather a "transmission rate".

SuggestedRemedy

Change the text from: "The ternary symbol transmission at the MDI shall be.." TO: 'The ternary symbol transmission rate at the MDI shall be..."

Response *Response Status* **W**

REJECT.

See response to comment 78, propose deleting 96.5.1.3.

Cl **96** *SC* **96.5.2** *P* **48** *L* **50** # 590

Dawe, Piers — Mellanox

Comment Type **E** *Comment Status* **A**

Test Modes

SuggestedRemedy

Test modes
Correct other rogue capitals, e.g. Test Fixtures.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

To conform to acceptable IEEE header grammar rules, only the first word of a header is capitalized (unless necessary). Scrub draft for "rogue capitals".

Cl **96** *SC* **96.5.2** *P* **49** *L* **28** # 618

Hidaka, Yasuo — Fujitsu Laboratories of

Comment Type **E** *Comment Status* **R**

Reference to section Transmitter Timing Jitter is needed.

SuggestedRemedy

Add a reference to the section.

Response *Response Status* **C**

REJECT.

See response to comment #279.

Cl **96** *SC* **96.5.2** *P* **49** *L* **3** # 638

Hidaka, Yasuo — Fujitsu Laboratories of

Comment Type **T** *Comment Status* **X** *CL45/22*

This is not the section to define the control register.

SuggestedRemedy

Move the definition of 3-bit control register Table 96-4 to clause 45, and add a reference to the register at line 3.

Proposed Response *Response Status* **O**

Cl **96** *SC* **96.5.2** *P* **49** *L* **45** # 619
Hidaka, Yasuo Fujitsu Laboratories of

Comment Type **E** *Comment Status* **A**

A period should not come to the beginning of a line.

SuggestedRemedy

Move the period to the end of previous line.

Response *Response Status* **C**

ACCEPT.

"." appears on new line, will be fixed.

Cl **96** *SC* **96.5.2** *P* **49** *L* **63** # 597
Dawe, Piers Mellanox

Comment Type **TR** *Comment Status* **A**

This says "These modes shall be enabled by setting a 3-bit control register." What register is this? Management is optional, and the way of doing management is also optional. So this can't be "shall".

SuggestedRemedy

These modes may be selected by setting bits x to y of [some PMA/PMD control register (Register n.m.n; see 45.a.b.c)

Maybe 100BASE-T1 PMA/PMD control register?

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See Comment #94

Cl **96** *SC* **96.5.2** *P* **49** *L* **9** # 617
Hidaka, Yasuo Fujitsu Laboratories of

Comment Type **E** *Comment Status* **A**

Top margin of the table cells are too small.

SuggestedRemedy

Increase the top margin of the table cells of Table 96-4.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.5.2** *P* **49** *L* **9** # 573
Wu, Peter Marvell

Comment Type **E** *Comment Status* **A**

The font size is too big for the table.

SuggestedRemedy

fix font size, also check correct font and style are used.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.5.2** *P* **50** *L* **13** # 575
Wu, Peter Marvell

Comment Type **E** *Comment Status* **A**

The font size is too big for the table.

SuggestedRemedy

fix font size, also check correct font and style are used.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.5.2** *P* **50** *L* **13** # 574
Wu, Peter Marvell

Comment Type **E** *Comment Status* **A**

The wrong font size and paragraph spacing is used throughout Clause 96.

SuggestedRemedy

fix font size, fix spacing, also check correct font and style are used.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.5.2** *P* **50** *L* **14** # 639

Hidaka, Yasuo — Fujitsu Laboratories of

Comment Type **T** *Comment Status* **A**

Reference to section PCS transmit symbol mapping is required.

SuggestedRemedy

Add a reference to the section.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change
"Section PCS transmit symbol mapping." to
"Section PCS transmit symbol mapping in 96.3.2.4."

Cl **96** *SC* **96.5.2** *P* **50** *L* **4** # 620

Hidaka, Yasuo — Fujitsu Laboratories of

Comment Type **E** *Comment Status* **A**

Top margin of table cells of Table 96-5 is too small.

SuggestedRemedy

Increase the top margin of table cells.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.5.2** *P* **62** *L* **52** # 451

Tazebay, Mehmet — Broadcom

Comment Type **E** *Comment Status* **A**

Replace "are" with "shall be" as the test modes are requirements for compliancy testing.

SuggestedRemedy

Change "described in Table 96-4 are provided" to "described in Table 96-4 shall be provided".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 94.

Cl **96** *SC* **96.5.2** *P* **63** *L* **1** # 94

Ran, Adee — Intel

Comment Type **E** *Comment Status* **A**

Two "shall" statements for the test modes, but what is actually required?

"shall only change the data" - impossibly to verify since the characteristics are unly measured in the test modes. Also, these are analog characteristics, and are typically dependent on the transmitted data in some way, so "shall not alter" is impossible to commit to.

"shall be enabled" seems to make a normative requirement on the _enabling_ of the test modes through a register (unspecified one). This is unusual (although the text is apparently iherited from another clause).

I assume that the implementation of test modes is the actual normative requirement.

SuggestedRemedy

Change this paragraph from

"These test modes shall only change the data symbols provided to the transmitter circuitry and not alter the electrical and jitter characteristics of the transmitter and receiver from those of normal operation. These modes shall be enabled by setting a 3-bit control register."

to

"The test modes for the 100BASE-T1 PHY described in Table 96–4 shall be provided. These test modes are controlled by <register or variable name>. The test modes should be implemented by changing the data symbols provided to the transmitter circuitry, to minimize changes to the electrical and jitter characteristics of the transmitter and receiver from those of normal operation."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Modify text to read more similarly to 40.6.1.1.2.

Change
"The test modes for the 100BASE-T1 PHY described in Table 96-4 are provided to allow for testing of the transmitter waveform, transmitter distortion, transmitter jitter, and transmitter droop. The tests modes only change the data symbols provided to the transmitter circuitry and not alter the electrical and jitter characteristics of the transmitter and receiver from those of notmal operation. The shall be enabled by setting a 3-bit control register."

to

"The test modes described below shall be provided to allow testing of the transmitter

waveform, transmitter distortion, transmitter jitter, and transmitter droop. The modes shall be enabled by setting bits 2102.13:15 (100BASE-T1 PMA/PMD test control register) of the the PHY Management register set as shown in Table 96-4. These test modes shall only change the data symbols provided to the transmitter circuitry and shall not alter the electrical and jitter characteristics of the transmitter and receiver from those of normal (non-test mode) operation."

Cl **96** *SC* **96.5.2** *P* **63** *L* **12** # 256

Thompson, Geoff GraCaSI

Comment Type **ER** *Comment Status* **A**

The word Reserved" in test mode 3 is incorrect. The register is", in fact," not reserved.

SuggestedRemedy

Remove the word "Reserved"

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment 80.

Cl **96** *SC* **96.5.2** *P* **63** *L* **27** # 279

Thompson, Geoff GraCaSI

Comment Type **TR** *Comment Status* **A**

This is all flim flam

SuggestedRemedy

Specify the test in such a way that it is relevant to the in use" transmit waveform and its functional requirement with fully specified test conditions. Make the test mandatory.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Remove the whole paragraph. Also, in table 96-4, remove "Test mode 3 – Transmit jitter test in SLAVE mode (reserved)", and insert "Reserved, operations not defined".

Entire task force is offended!

Cl **96** *SC* **96.5.2** *P* **63** *L* **27** # 80

Ran, Adee Intel

Comment Type **T** *Comment Status* **A**

Why is this optional (unlike clause 40 equivalent)? What other specified way is there to test transmitter jitter in slave mode?

Why discuss the timing jitter requirement here? unnecessary even if optional.

SuggestedRemedy

Delete the first two sentences of this paragraph, up to and including "As an optional feature".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove the whole paragraph. Also, in table 96-4, remove "Test mode 3 – Transmit jitter test in SLAVE mode (reserved)", and insert "Reserved, operations not defined".
Note that Slave timing jitter is shown in section 96.5.4.3 and figure 96-21.

Cl **96** *SC* **96.5.2** *P* **63** *L* **3** # 278
Thompson, Geoff GraCaSI

Comment Type **TR** *Comment Status* **A**

a 3 bit control register"? Just any one?

SuggestedRemedy

This needs to point ot the control register specification with a hot link. Where is the register specified?

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Modify text to read more similarly to 40.6.1.1.2.

Change
"The test modes for the 100BASE-T1 PHY described in Table 96-4 are provided to allow for testing of the transmitter waveform, transmitter distortion, transmitter jitter, and transmitter droop. The tests modes only change the data symbols provided to the transmitter circuitry and not alter the electrical and jitter characteristics of the transmitter and receiver from those of notmal operation. The shall be enabled by setting a 3-bit control register."

to

"The test modes described below shall be provided to allow testing of the transmitter waveform, transmitter distortion, transmitter jitter, and transmitter droop. The modes shall be enabled by setting bits 2102.13:15 (100BASE-T1 PMA/PMD test control register) of the the PHY Management register set as shown in Table 96-4. These test modes shall only change the data symbols provided to the transmitter circuitry and shall not alter the electrical and jitter characteristics of the transmitter and receiver from those of normal (non-test mode) operation."

Cl **96** *SC* **96.5.2** *P* **63** *L* **36** # 408
Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

There is a typo for "gs1" as it should be g(x)

SuggestedRemedy

Change "gs1" to "g(x)

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.5.2** *P* **63** *L* **36** # 187
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **A**

Equations should be entered using the FrameMaker equation editor using para style Equation or EU,EquationUnnumbered
Same comment line 48-52

SuggestedRemedy

Use Equation editor and proper style

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.5.2** *P* **63** *L* **43** # 81
Ran, Adee Intel

Comment Type **T** *Comment Status* **A**

x2_n is not used by the symbol mapping in table 96-5 and needs not be defined.

Also, there is only one transmitter in this PHY.

SuggestedRemedy

Change "x0n, x1n, and x2n" to "x0n and x1n". Delete the equation that defines x2n.

Delete "The ternary symbol sequence shall be presented simultaneously to all transmitters."

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.5.2** *P* **63** *L* **45** # 280
Thompson, Geoff GraCaSI

Comment Type **TR** *Comment Status* **A**

What does the term simultaneously to all transmitters" mean in this context"," i.e. only one transmitter? Is it residual text from 1000BASE-T? Or does it mean the transmitter at each end of the link. If the latter then I believe there needs to be a relati

SuggestedRemedy

Either remove this text as obsolete or provide a proper specification for the relationship between the two test clocks.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

This is obsolete text from Clause 40. Remove "The ternary symbol sequence shall be presented simultaneously to all transmitters."

Cl **96** *SC* **96.5.2** *P* **63** *L* **45** # 409

Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

The statement "The ternary symbol sequence shall be presented simultaneously to all transmitters." is not applicable to single pair operation

SuggestedRemedy

Remove "The ternary symbol sequence shall be presented simultaneously to all transmitters."

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.5.2** *P* **63** *L* **9** # 95

Ran, Adee Intel

Comment Type **E** *Comment Status* **A**

The register that controls these test modes is unnamed and undefined. Should be linked with MDIO etc.

Also, table is badly formatted.

SuggestedRemedy

Add register name, address, etc.

Format table fonts and spacing as in other tables.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 94.

Table Format will be fixed

Cl **96** *SC* **96.5.2** *P* **64** *L* **12** # 82

Ran, Adee Intel

Comment Type **T** *Comment Status* **A**

"random" is an incomplete definition. Is there a requirement that the sequence is "random enough"?

The sequence of test mode 4 is pseudo-random - so, can test mode 4 be used for PSD mask testing as well? If it's not sufficiently random, define the randomness requirement, or preferably define a longer generating polynomial for this mode.

SuggestedRemedy

Delete test mode 5 and use test mode 4 for PSD mask testing.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Reject: Delete test mode 5.

See response to comment 257, change "random" to "pseudo-random".

Cl **96** *SC* **96.5.2** *P* **64** *L* **13** # 257

Thompson, Geoff GraCaSI

Comment Type **ER** *Comment Status* **A**

Random" is a fantasy and not what is specified

SuggestedRemedy

Change the word "random" to "pseudo-random".

Response *Response Status* **W**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.5.3** *P* **50** *L* **19** # 598

Dawe, Piers — Mellanox

Comment Type **TR** *Comment Status* **R**

This says "The following fixtures, or their equivalents... shall be used for measuring..." But 802.3 is not a test spec. Any "shall" must be applied to the interface under test, not to the test itself. There is no requirement to do the test, only to comply with the criterion it would measure, if carried out.

SuggestedRemedy

Change "shall be used" to "are used". (The shalls go in the text for each test, which refers to the relevant test fixture.)

Response *Response Status* **W**

REJECT.

For example, "shall be used" in the context of 1000BASE-T test fixtures is the exact language used in 40.6.1.1.3.

Cl **96** *SC* **96.5.3** *P* **50** *L* **20** # 599

Dawe, Piers — Mellanox

Comment Type **TR** *Comment Status* **R**

This says "The tolerance of resistors shall be +/- 0.1%." But 802.3 is not a test spec. Tolerancing a load is the test implementer's problem - he must look after his tolerances according to e.g. the accuracy or cost that he needs. Compare e.g. 85.8.3.5 Test fixture - no tolerances. We have been over this in multiple projects.
And see another comment on this section.

SuggestedRemedy

Delete "The tolerance of resistors shall be +/- 0.1%."

Response *Response Status* **W**

REJECT.

Tolerances are specified to ensure repeatable results.

Cl **96** *SC* **96.5.3** *P* **51** *L* **45** # 640

Hidaka, Yasuo — Fujitsu Laboratories of

Comment Type **T** *Comment Status* **A**

The disturbing signal Vd is not clear.

SuggestedRemedy

Provide more description about the disturbing signal.
Add the genetor equipment to Figure 96-18.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comments 336 and 84.

Cl **96** *SC* **96.5.3** *P* **51** *L* **48** # 336

Zimmerman, George — CME Consulting, Inc.

Comment Type **TR** *Comment Status* **R**

Is "the generator of the disturbing signal must have sufficient linearity and range..." - is this stating a requirement on the test fixture? if so, it needs further definition.

SuggestedRemedy

change "must have" to "shall have", and define "sufficient linearity and range" as well as "appreciable distortion" in measurable terms

Response *Response Status* **W**

REJECT.

"must have sufficient linearity and range" in the context of the disturber generator is the exact language used in 40.6.1.1.3. This text was adopted because the disturber generator used with 100BASE-T1 test fixture 2 is almost identical to 1000BASE-T test fixture 3.

Cl **96** *SC* **96.5.3** *P* **64** *L* **18** # 96

Ran, Adee Intel

Comment Type **E** *Comment Status* **A**

Why is "for data communication only" stated here?

Suggesting rephrasing this sentence for clarity.

SuggestedRemedy

Change

"The following fixtures, or their equivalents, as shown in Figure 96-17, Figure 96-18, and Figure 96-19, in stated respective tests, shall be used for measuring the transmitter specification for data communication only."

to

"The fixtures shown in Figure 96-17, Figure 96-18, and Figure 96-19, or their equivalents, shall be used in stated respective tests for measuring the transmitter specifications."

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.5.3** *P* **64** *L* **19** # 281

Thompson, Geoff GraCaSI

Comment Type **TR** *Comment Status* **A**

What does the term for data communications only" mean here? What else is there to consider?

SuggestedRemedy

Clarify and complete.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change

"The following fixtures, or their equivalents, as shown in Figure 96-17, Figure 96-18, and Figure 96-19, in stated respective tests, shall be used for measuring the transmitter specification for data communication only."

to

"The fixtures shown in Figure 96-17, Figure 96-18, and Figure 96-19, or their equivalents, shall be used in stated respective tests for measuring the transmitter specifications."

Cl **96** *SC* **96.5.3** *P* **64** *L* **20** # 97

Ran, Adee Intel

Comment Type **E** *Comment Status* **A**

Unclear statement. What does "it" refer to? what does "specification compliant" mean in this context?

SuggestedRemedy

Change "it" to "the test fixtures".

Delete "as long as the measurements at MDI for all the defined tests are the100BASE-T1 PHY transmitter specification compliant".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change
"It may include passive components between PHY and MDI as long as the measurements at MDI for all the defined tests are the100BASE-T1 PHY transmitter specification compliant."
to
"There may be passive components between PHY and MDI as long as 100BASE-T1 PHY transmitter specification compliance can be attained at the MDI."

Cl **96** *SC* **96.5.3** *P* **64** *L* **20** # 188

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **A**

Which "it" is it? I would assume the test fixture.

SuggestedRemedy

Change
"It may include passive components"
to
"The text fixture may include passive components"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 97.

Cl **96** *SC* **96.5.3** *P* **64** *L* **29** # 300

Thompson, Geoff GraCaSI

Comment Type **E** *Comment Status* **R**

Strange symbology. I have never ever seen a digital oscilloscope with a round display.

SuggestedRemedy

Change the display representation" in the diagrams (throughout the draft) to rectangles or rectangles with rounded corners.

Response *Response Status* **C**

REJECT.

The figure is only for illustration purposes.

Cl **96** *SC* **96.5.3** *P* **64** *L* **29** # 282

Thompson, Geoff GraCaSI

Comment Type **TR** *Comment Status* **A**

A high impedance" probe is called for with no specification.

SuggestedRemedy

Specify a minimum input impedance that will satisfy the "high Impedance" requirement of these tests.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Add "with resistance > 10KOhm and capacitance < 1pF" to Figures 96-17 and 96-18. Similar to Clause 55 10GBASE-T.

Cl **96** *SC* **96.5.3** *P* **65** *L* **40** # 83

Ran, Adee Intel

Comment Type **T** *Comment Status* **R**

in 100GBASE-T, test mode 3 was used to measure the transmitter jitter in slave mode, possibly while receiving data only on other lanes. In this PHY, indeed, there is only one pair so test mode 3 will be "contaminated" by the remote signal. I assume this is the reason for requiring the transmitter clock separately.

However, the unnecessary burden to PHY design of adding a separate clock output does not seem justified. Also, this may not be a representative signal (as required for the test modes) and the measurement meaning may become questionable.

Instead, the "contamination" by the remote signal may be removed by using more complex test fixtures (e.g. directional couplers), calibration, and/or post-processing or measured data. The exact methods may be left to the tester.

Note that jitter in slave mode (regardless of measurement method) requries a remote partner to be connected and active anyway.

SuggestedRemedy

Replace this paragraph with

"Transmitter jitter in slave mode is tested using test mode 3 while a compliant signal is transmitted from a link partner into the DUT. The link partner signal's effect should be minimized by calibrating the test conditions in order to yield clean jitter measurements."

Response *Response Status* **C**

REJECT.

See response to comment 80.

100GBASE-T? That’s a different task force.

Cl **96** *SC* **96.5.3** *P* **65** *L* **45** # 84

Ran, Adee Intel

Comment Type **T** *Comment Status* **A**

V_d is not fully defined. Is it a sine wave?

Peak-to-peak is usually twice the amplitude.

Also, the test pattern generator has only the transmitter reference clock, not the test pattern.

SuggestedRemedy

Change

"The disturbing signal Vd, shall have amplitude of 5.4 volts peak-to-peak differential, and frequency given by one-sixth of the symbol rate synchronous with the test pattern"

to

"The disturbing signal Vd shall be a sine wave, synchronous with the transmit reference clock, with frequency given by one-sixth of the symbol rate and differential peak-to-peak voltage of 5.4 volts".

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.5.3** *P* **65** *L* **45** # 232

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **A**

Had to hunt for Vd. Add ref to Fig 96-18.

SuggestedRemedy

per comment, combine para at ln 44 & ln 48 into one para.
Or split this section into 3 L4 sections; one for each figure.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #283.

Cl **96** *SC* **96.5.3** *P* **65** *L* **45** # 283

Thompson, Geoff GraCaSI

Comment Type **TR** *Comment Status* **A**

The disturbing voltage is mentioned but there is no indication whatsoever in the diagrams as to where and how the disturbing voltage is to be introduced.

SuggestedRemedy

Fully specify the test.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change

"The disturbing signal Vd, shall have amplitude of 5.4 volts peak-to-peak differential, and frequency given by one-sixth of the symbol rate synchronous with the test pattern"

to

"In Figure 96-18, the disturbing signal, Vd, shall be a sine wave, synchronous with the transmit reference clock, with frequency given by one-sixth of the symbol rate and differential peak-to-peak voltage of 5.4 volts".

Cl **96** *SC* **96.5.4** *P* **52** *L* **1** # 601

Dawe, Piers Mellanox

Comment Type **TR** *Comment Status* **R**

This says "Where a load is not specified, the transmitter shall meet the requirements of this section with a 100 ohm (the value can vary within +/-1% range) resistive differential load connected to each transmitter output." But 802.3 is not a test spec. Tolerancing a load is the test implementer's problem - he must look after his tolerances according to e.g. the accuracy or cost that he needs, and writing it this way means that at least conceptually, an implementation must pass with 99 ohm and with 101 ohm - twice as many tests, not necessary.

SuggestedRemedy

Delete "(the value can vary within +/-1% range)". If they are 1%-critical, tweak the limits for e.g. droop.

Response *Response Status* **W**

REJECT.

See response to comment #599.

Cl **96** SC **96.5.4** P **65** L **54** # 85
Ran, Adee Intel

Comment Type **T** *Comment Status* **R**

This statement is unclear. Should the PMA include AC coupling or should it operate with external AC coupling?

SuggestedRemedy

Change "The PMA shall operate with AC coupling to the MDI" to "The PMA shall include AC coupling to the MDI".

Response *Response Status* **C**

REJECT.

The AC coupling to MDI is left to the implementor.

Cl **96** SC **96.5.4** P **66** L **2** # 410
Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

The word "each" is not redundant in "to each transmitter output"

SuggestedRemedy

Change "... to each transmitter output." to "... to the transmitter output."

Response *Response Status* **C**

ACCEPT.

Accept commentors suggested remedy.

Cl **96** SC **96.5.4** P **66** L **3** # 86
Ran, Adee Intel

Comment Type **T** *Comment Status* **R**

Is there no specification for peak differential output voltage?

SuggestedRemedy

Add a subclause and specify minimum and maximum values.

Response *Response Status* **C**

REJECT.

Droop is defined as a relative measure(Vd/Vpk), no need to define Vpk.

Cl **96** SC **96.5.4.1** P **52** L **32** # 327
Zimmerman, George CME Consulting, Inc.

Comment Type **ER** *Comment Status* **A**

MATLAB is a registered trademark of The Mathworks, Inc.

SuggestedRemedy

Mark and reference trademark.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment 558.

Cl **96** SC **96.5.4.2** P L # 343
Zinner, Helge Robert Bosch GmbH

Comment Type **E** *Comment Status* **A**

some items are colored - but color won't help here

SuggestedRemedy

rewrite text in black letters

Response *Response Status* **C**

ACCEPT.

See response to comment #553.

Cl **96** SC **96.5.4.2** P **53** L **1** # 558
Anslow, Pete Ciena

Comment Type **E** *Comment Status* **A**

96.5.4.2 includes some MATLAB code. If people are expected to be able to use this code, then it needs a copyright release as per the example in 40.6.1.2.4

SuggestedRemedy

Add a copyright release as per 40.6.1.2.4:
"Copyright release for MATLAB code: Users of this standard may freely reproduce the MATLAB code in this subclause so it can be used for its intended purpose."

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.5.4.2** *P* **53** *L* **49** # 621
Hidaka, Yasuo Fujitsu Laboratories of

Comment Type **E** *Comment Status* **A**
Inside of the for loop is not indented.

SuggestedRemedy
Add indentation from Page 53 Line 49 to Page 54 Line 9.

Response *Response Status* **C**
ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.5.4.2** *P* **53** *L* **6** # 233
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **A**
Nice colors. what do they mean?

SuggestedRemedy
remove the nice colors from the matlab code.

Response *Response Status* **C**
ACCEPT.

See response to comment #553.

Cl **96** *SC* **96.5.4.2** *P* **53** *L* **6** # 344
Zinner, Helge Robert Bosch GmbH

Comment Type **E** *Comment Status* **A**
Line: 6,7,11,20,25,26,30,32
some items are colored - but color won't help here

SuggestedRemedy
rewrite text in black letters

Response *Response Status* **C**
ACCEPT.

See response to comment #553.

Cl **96** *SC* **96.5.4.2** *P* **54** *L* **3** # 641
Hidaka, Yasuo Fujitsu Laboratories of

Comment Type **T** *Comment Status* **R**
Right matrix divide is odd here.
It is probably typo of left matrix divide.

SuggestedRemedy
Change "tx1/X" with "tx1\X".

Response *Response Status* **C**
REJECT.

"/" is the intended operator.

Cl **96** *SC* **96.5.4.2** *P* **67** *L* **1** # 372
Lusted, Kent Intel

Comment Type **E** *Comment Status* **A**
Matlab code needs a copyright release foot note.

See Clause 68.6.6.2 in the IEEE Std. 802.3-2012 for an example.

SuggestedRemedy
Add it

Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See response to comment 558.

Cl **96** SC **96.5.4.3** P **68** L **20** # 87

Ran, Adee — Intel

Comment Type **T** *Comment Status* **R**

50 ps is 3.3 mUI, unfiltered! for comparision, in 1000BASE-T (almost double the baud rate) the parallel specification is 1.4 ns (175 mUI) unfiltered and 0.3 ns (37.5 mUI) filtered.

While this jitter may be feasible in master mode, the real problem is that jitter in slave mode is very tight too (10 mUI). Meeting this requirement with a recovered clock may impose very specific design requirements, and doesn't seem necessary, in view of 1000BASE-T.

Is there a reason for such a tight jitter spec compared to 1000BASE-T?

Also, why use ps in master mode and UI in slave mode? be consistent.

SuggestedRemedy

Change master mode jitter to less than 0.01 UI unfiltered, and slave mode jitter to less than 0.1 UI unfiltered.

Response *Response Status* **C**

REJECT.

This is an RMS measurement value, and the measurement detail is not the same as 1000BASE-T spec (which is defined as peak-to-peak jitter).

Cl **96** SC **96.5.4.3** P **68** L **20** # 234

Remein, Duane — Huawei Technologies

Comment Type **E** *Comment Status* **A**

Is there some special reason for creating this unused three letter mnemonic?

SuggestedRemedy

Change
No High Pass Filter (HPF)
to
No high pass filter

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** SC **96.5.4.4** P **55** L **19** # 622

Hidaka, Yasuo — Fujitsu Laboratories of

Comment Type **E** *Comment Status* **A**

Top margin of the table cells of Table 96-6 is too small.

SuggestedRemedy

Increase the top margin of the table cells of Table 96-6.

Response *Response Status* **C**

ACCEPT.

Cl **96** SC **96.5.4.4** P **55** L **27** # 345

Zinner, Helge — Robert Bosch GmbH

Comment Type **E** *Comment Status* **A**

right lower table box is empty, just a '-'

SuggestedRemedy

value is missing or note that this is intended to be blank

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Delete "-" so that cell is blank.

Cl **96** SC **96.5.4.4** P **55** L **31** # 438

Tazebay, Mehmet — Broadcom

Comment Type **T** *Comment Status* **A**

The information is provided for the spectrum analyzer measurements but there is a missing section at the end for sweep time unit and the detector type

SuggestedRemedy

Insert "min, RMS detector" after "... sweep time>1"

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.5.4.4** *P* **69** *L* **18** # 88

Ran, Adee Intel

Comment Type **T** *Comment Status* **A**

PSD units are dBm/Hz, even if spectrum analyzer measurements display values in dBm. This removes the need for measurement settings in the footnote.

Also, table format is different from other tables and text coincides with borders.

SuggestedRemedy

Specify PSD in dBm/Hz instead, in this table and in figure 96-22. Modify the values as necessary.

Format the table correctly.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change dBm units to dBm/Hz in Table 96-6, and Figure 96-22. Keep the line after table (Settings).

Cl **96** *SC* **96.5.4.4** *P* **69** *L* **31** # 235

Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **A**

When aligning all the ugly table to 802.3 template be sure to use the proper note style

SuggestedRemedy

per comment

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.5.4.4** *P* **69** *L* **4** # 98

Ran, Adee Intel

Comment Type **E** *Comment Status* **A**

There is no need to explain in this document why specifications that were used in a past standard are not used in this one. This should remain in presentations.

The definition of test mode 5 needs not be repeated here. The "random sequence" requirement is addresed in a separate comment.

SuggestedRemedy

Delete the first paragraph, from "When test mode 5" to "the same capability".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace
"When test mode 5 is enabled, the PHY shall transmit a random sequence of ternary codes {-1, 0, +1} which are mapped
to 3 discrete differential voltage levels [-1, 0, +1] volts correspondingly. Other than that, the time domain templates for
voltage levels and rise/fall times are not defined in this document because a PSD mask is defined which gives the flexibility
to do spectral shaping for EMC emissions, if needed. This mask is one of the necessary conditions for transmitter compliance. The time domain templates, however, will not allow the same capability."

to

"When test mode 5 is enabled, the PHY is forced to MASTER mode. In this mode, a pseudo random sequence of ternary codes {-1, 0, +1}, which are mapped to 3 discrete differential signal levels, is transmitted. "

Cl **96** *SC* **96.5.4.4** *P* **69** *L* **5** # 411

Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

In 96.5.4.4 (page 69 line 5, 6), the statement suggest a time domain template but 100BASE-T1 specifies TX PSD in order to provide the best flexibility for signal spectrum control for EMC. Therefore, any statement regarding to "voltage levels" must be removed.

SuggestedRemedy

Change "... to 3 discrete differential voltage levels [-1, 0, +1] volts correspondingly. Other than that, the time domain templates for voltage levels ..."
to "to 3 discrete differential signal levels. The time domain templates for signal levels ..."

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.5.4.5** *P* **56** *L* **33** # 328

Zimmerman, George — CME Consulting, Inc.

Comment Type **ER** *Comment Status* **A**

table implies other modes, in confusing and difficult to read style.
Same comment applies for 96.5.5.2, Receiver Frequency tolerance

SuggestedRemedy

write the requirement inline in the sentence above, appending it after "within the range "
to read (for each of 96.5.4.5 and 96.5.5.2):
"within the range 66.666 MHz +/- 100 ppm."
Delete tables

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #442.

Cl **96** *SC* **96.5.4.5** *P* **56** *L* **36** # 623

Hidaka, Yasuo — Fujitsu Laboratories of

Comment Type **E** *Comment Status* **R**

Table caption is missing.

SuggestedRemedy

Add a table caption.
Add a reference for the table caption to text.

Response *Response Status* **C**

REJECT.

See response to comment 442.

Cl **96** *SC* **96.5.4.5** *P* **56** *L* **37** # 593

Dawe, Piers — Mellanox

Comment Type **T** *Comment Status* **A**

Don't use a table if there is only one entry. The entry in the Mode column isn't right anyway.

SuggestedRemedy

Complete the sentence:
...PHY in MASTER mode shall be within the range 66.666' MHz ± 100 ppm.
Delete the table.
Also in 96.5.5.2.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 442.

Cl **96** *SC* **96.5.4.5** *P* **70** *L* **36** # 236

Remein, Duane — Huawei Technologies

Comment Type **E** *Comment Status* **A**

Are you going to use a table or text?
Same issues pg 71 ln 3

SuggestedRemedy

Change:
The symbol transmission rate of the 100BASE-T1 PHY in MASTER mode shall be within the range:
to
The symbol transmission rate of the 100BASE-T1 PHY in MASTER mode shall be within the range shown in Table 96-xxx.

Convert the stuff on line 36-38 to a proper table.

Perform a similar fix on pg 71 ln 3-10.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 442.

Change "The receiver shall properly receive incoming data with a symbol rate within the range:"

to

"The receiver shall properly receive incoming data with a symbol rate of 66.666 MBd +- 100 ppm." (similar to 40.6.1.2.6) and delete table

Cl **96** *SC* **96.5.4.5** *P* **70** *L* **36** # 442

Tazebay, Mehmet Broadcom

Comment Type **T** *Comment Status* **A**

n 96.5.4.5 (page 70 line 36 to 38), there is no need for a table and symbol rate should be changed to Mbaud instead of MHz. This sections needs to be revised.

SuggestedRemedy

Remove the table.
Change "The symbol transmission rate of the 100BASE-T1 PHY in MASTER mode shall be within the range:"
to "The symbol transmission rate of the 100BASE-T1 PHY in MASTER mode shall be within the range: of 66.666MBd +- 100 ppm."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove table.

Change
"The symbol transmission rate of the 100BASE-T1 PHY in MASTER mode shall be within the range:"

to

"The symbol transmission rate of the MASTER PHY shall be 66.666 MBd +- 100 ppm." (similar to 40.6.1.2.6)

Cl **96** *SC* **96.5.4.5** *P* **70** *L* **37** # 89

Ran, Adee Intel

Comment Type **T** *Comment Status* **A**

Table has only one row (no other modes in this PHY).

Transmission rate units are Bauds, not Hz.

Comment also applies to RX frequency tolerance in 96.5.5.2.

SuggestedRemedy

Delete the table and specify the rate as 66.666 MBd within the text, here and in 96.5.5.2.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 446.

Cl **96** *SC* **96.5.5.1** *P* **70** *L* **49** # 90

Ran, Adee Intel

Comment Type **T** *Comment Status* **A**

A normative statement is required here.

SuggestedRemedy

Change "are received" to "shall be received".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change

"Differential signals received at the MDI that were transmitted from a remote transmitter within the specifications of Transmitter
Electrical Specifications and have passed through a link specified in Table 96.7, are received with a bit error ratio
less than 10-10 and sent to the PCS after link reset completion."

to

"Differential signals received at the MDI that were transmitted from a remote transmitter within the specifications of Transmitter Electrical Specifications and have passed through a link specified in Section 96.7, shall be received with a bit error ratio less than 10^-10."

Cl **96** *SC* **96.5.5.1** *P* **70** *L* **50** # 453

Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **R**

Replace "Table 96.7" with "Table 96-7" for consistency.

SuggestedRemedy

Change "Table 96.7" to "Table 96-7".

Response *Response Status* **C**

REJECT.

See response to comment 90. Tale 96-7 doesn't exist, and comment 90 suggests changing wording around.

Cl **96** *SC* **96.5.5.2** *P* **57** *L* **6** # 624

Hidaka, Yasuo — Fujitsu Laboratories of

Comment Type **E** *Comment Status* **R**

Table caption is missing.

SuggestedRemedy

Add a table caption.
Add a reference for the table caption to text.

Response *Response Status* **C**

REJECT.

See response to comment 418.

Cl **96** *SC* **96.5.5.2** *P* **71** *L* **4** # 418

Tazebay, Mehmet — Broadcom

Comment Type **E** *Comment Status* **A**

In 96.5.5.2 (page 71 line 4, 7, 8), there is no need for a table and symbol rate should be changed to Mbaud instead of MHz. This section needs to revised

SuggestedRemedy

Remove the table.
Change "The receiver shall properly receive incoming data with a symbol rate within the range:"
to "The receiver shall properly receive incoming data with a symbol rate within the range: of 66.666 MBd ± 100 ppm."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove table.

Change
"The receiver shall properly receive incoming data with a symbol rate within the range:"

to

"The receive feature shall properly receive incoming data with a symbol rate within the range 66.666MBd +- 100 ppm."

Cl **96** *SC* **96.5.5.3** *P* **57** *L* **11** # 333

Zimmerman, George — CME Consulting, Inc.

Comment Type **TR** *Comment Status* **R**

Alien crosstalk is poorly represented by discrete-level ternary signals, due to the diverse coupling between link segments. The test is inadequate.
Additionally, the noise source is specified as a Broad-R Reach, which is a trademarked, non-referenced source.

SuggestedRemedy

Replace noise source with a 66 MHz gaussian noise source, see clause 55 for an example configuration.

Response *Response Status* **W**

REJECT.

The worst-case noise source is a 100BASE-T1 transmitter, similar to what is used in the 1000BASE-T test.

BroadR-Reach references have been removed based on other comments.

Cl **96** *SC* **96.5.5.3** *P* **57** *L* **14** # 625

Hidaka, Yasuo — Fujitsu Laboratories of

Comment Type **E** *Comment Status* **A**

An edit result from "of" to "to" is left.

SuggestedRemedy

Clean up the edit result from "of" to "to".

Response *Response Status* **C**

ACCEPT.

See response to comment 258.

Cl **96** *SC* **96.5.5.3** *P* **57** *L* **26** # 642

Hidaka, Yasuo — Fujitsu Laboratories of

Comment Type **T** *Comment Status* **A**

500 O (two locations) and 100 O are odd.

SuggestedRemedy

Change them with "500 Ohm" and "100 Ohm".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 38.

Cl **96** *SC* **96.5.5.3** *P* **57** *L* **32** # 643
Hidaka, Yasuo Fujitsu Laboratories of

Comment Type **T** *Comment Status* **A**
BroadR-Reach is not defined.

SuggestedRemedy
Provide a definition of BroadR-Reach, or change the term (2 locations).

Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See response to comment 577.

Cl **96** *SC* **96.5.5.3** *P* **57** *L* **32** # 481
Mitsuru, Iwaoka Yokogawa Electric Co

Comment Type **E** *Comment Status* **A**
There is a not-defiend term "BroadR-Reach" in the Figure 96-23.

SuggestedRemedy
Replace "BroadR-Reach" with "100BASE-T1" in the Figure 96-23 (two occurences).

Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See response to comment 577.

Cl **96** *SC* **96.5.5.3** *P* **71** *L* **14** # 176
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **A**
Extraneous mark-up: ofto

SuggestedRemedy
remove

Response *Response Status* **C**
ACCEPT.

See response to comment 258.

Cl **96** *SC* **96.5.5.3** *P* **71** *L* **14** # 258
Thompson, Geoff GraCaSI

Comment Type **ER** *Comment Status* **A**
Text is shown in strikeout and underscore.

SuggestedRemedy
Remove text styling.

Response *Response Status* **W**
ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.5.5.3** *P* **71** *L* **17** # 177
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **A**
The 1e-10 should not be allowed to split across a line.

SuggestedRemedy
This can be prevented by marking the work as no-hyphenating using the key sequence {Esc n s}.

Response *Response Status* **C**
ACCEPT.

Cl **96** *SC* **96.5.5.3** *P* **71** *L* **28** # 259
Thompson, Geoff GraCaSI

Comment Type **ER** *Comment Status* **A**
Resistor values are shown in red and with wrong symbol (font problem?)

SuggestedRemedy
Change red text to black and make sure that the ohm symbol appears in the PDF and printout. Add ohm symbol to Table 00-1 Symbol Table

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

See response to comment 38.

change font coloring to black

Cl **96** *SC* **96.5.5.3** *P* **71** *L* **31** # 213

Remein, Duane — Huawei Technologies

Comment Type **T** *Comment Status* **A**

More past sins. Are you testing a BroadR-Reach transmitter :-O

SuggestedRemedy

Change all 3 instance of BroadR-Reach in the draft to 100BASE-T1.

Response *Response Status* **C**

ACCEPT.

See response to comment #407.

Cl **96** *SC* **96.5.5.3** *P* **71** *L* **31** # 99

Ran, Adee — Intel

Comment Type **E** *Comment Status* **A**

BroadR-Reach

Should this be capitalized?

SuggestedRemedy

Change "BroadR-Reach 100Mbps COMPLIANT" to "100BASE-T1 COMPLIANT".

Delete the second instance of "BroadR-Reach".

Consider changing all-caps to normal case.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 577.

Change text to normal case.

Cl **96** *SC* **96.5.5.3** *P* **71** *L* **32** # 260

Thompson, Geoff — GraCaSI

Comment Type **ER** *Comment Status* **A**

Tradename BroadR-Reach" appears.

SuggestedRemedy

Remove tradename (2 places)

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #407.

Cl **96** *SC* **96.5.5.3** *P* **71** *L* **32** # 407

Tazebay, Mehmet — Broadcom

Comment Type **E** *Comment Status* **A**

In 96.5.5.3 (page 71 line 32, 34), "NOISE SOURCE .." should be lower case and "BroadR-Reach 100Mbps" should be changed to "100BASE-T1"

SuggestedRemedy

Change "NOISE SOURCE (BroadR-Reach 100Mbps COMPLIANT TRANSMITTER SENDING IDLES NONSYNCHRONOUS TO THE BroadR-Reach TRANSMITTER UNDER TEST
to " Noise source (100BASE-T1 compliant transmitter sending idles nonsynchronous to the 100BASE-T1 transmitter under test)"

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.5.5.3 Alien Crosstal** *P* **57** *L* **2530** # 606

Carlson, Steven — High Speed Design.c

Comment Type **E** *Comment Status* **A**

In Figure 96-23—Alien Crosstalk Noise Rejection Test Setup, resistor values are in red with the symbol "O". This does not conform to Std. 802.3-2012 usage.

SuggestedRemedy

Change resistor values to black with Omega symbol for Ohm.

Response *Response Status* **C**

ACCEPT.

See response to comment 38.

Cl **96** *SC* **96.5.5.3 Alien Crosstal** *P* **57** *L* **3234** # 605

Carlson, Steven High Speed Design.c

Comment Type **E** *Comment Status* **A**

Typo in Figure 96-23—Alien Crosstalk Noise Rejection Test Setup text

NOISE SOURCE (BroadR-Reach 100Mbps COMPLIANT
TRANSMITTER SENDING IDLES NONSYNCHRONOUS
TO THE BroadR-Reach TRANSMITTER UNDER TEST

SuggestedRemedy

Change to

NOISE SOURCE (100BASE-T1 100Mbps COMPLIANT
TRANSMITTER SENDING IDLES NONSYNCHRONOUS
TO THE 100BASE-T1 TRANSMITTER UNDER TEST)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 577.

Cl **96** *SC* **96.6** *P* **57** *L* **41** # 585

Wu, Peter Marvell

Comment Type **TR** *Comment Status* **X** *CL45/22*

This section incorrectly references Clause 22 as the MDIO type.

SuggestedRemedy

change text "specified in 22.2.4" to "specified in Clause 45"
line 51 add a reference to 45.2.1.2001 100BASE-T1 PMA/PMD control register (Register 1.19002100)
delete sections 96.6.3 MDC (management data clock) and 96.6.4 MDIO (management data input/output)

Proposed Response *Response Status* **W**

Cl **96** *SC* **96.6** *P* **71** *L* **41** # 91

Ran, Adee Intel

Comment Type **T** *Comment Status* **A**

Is the management interface normative or optional?

SuggestedRemedy

Use "may" or "shall" as required.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change
"makes use of"
to
"shall use".

Cl **96** *SC* **96.6** *P* **72** *L* **1** # 100

Ran, Adee Intel

Comment Type **E** *Comment Status* **A**

This subclause seems like an unnecessary repeat of the previous one, 96.6.1

SuggestedRemedy

Delete this subclause.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 284.

Cl **96** *SC* **96.6.1** *P* **71** *L* **45** # 284

Thompson, Geoff GraCaSI

Comment Type **TR** *Comment Status* **A**

This section claims to be about M/S resolution" but it offers no specifications whatsoever about the behavior when there is actually is a conflict.

SuggestedRemedy

Specify either a resolution mechanism or at least the behavior in each situation. i.e. what happens when both are in SLAVE mode (trivial) or when both are in MASTER mode.
The later needs to be multi-vendor known behavior for troubleshooting purposes.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change subclause 96.6.1 title to "MASTER-SLAVE configuration"

Change
"All 100BASE-T1 PHYs will default to configure as SLAVE upon power up or reset until a management system (for example, processor/micro controller) configures it to be MASTER.

MASTER-SLAVE assignment for each link configuration is necessary for establishing the timing control of each PHY."

To

"MASTER-SLAVE assignment for each link configuration is necessary for establishing the timing control of each PHY. In 100BASE-T1 one PHY shall be configured as MASTER and one PHY shall be configured as SLAVE to operate. In case both PHYs are configured to be MASTER or SLAVE, operation is undefined."

Cl **96** *SC* **96.6.1** *P* **71** *L* **47** # 214

Remein, Duane Huawei Technologies

Comment Type **T** *Comment Status* **A**

Standard do not have the force of will: "All 100BASE-T1 PHYs will default to"

SuggestedRemedy

Change will to shall

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.6.2** *P* **58** *L* **6** # 600

Dawe, Piers Mellanox

Comment Type **TR** *Comment Status* **A**

While this tells us what ought to happen (master meets slave) we need to cover the other cases.

SuggestedRemedy

Explain what happens if master meets master or slave meets slave.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #284.

Cl **96** *SC* **96.7** *P* **58** *L* **24** # 559

Anslow, Pete Ciena

Comment Type **E** *Comment Status* **A**

Per the IEEE style guide, "The value of a quantity shall be expressed by an Arabic numeral followed by a space and the appropriate unit name or symbol."
So, "15m UTP" should be "15 m UTP" where the space between the number and the unit is a non-breaking space (Ctrl space)

SuggestedRemedy

Change "15m UTP" to "15 m UTP" where the space between the number and the unit is a non-breaking space (Ctrl space).
In Figure 96-24, change "15m" to "15 m"
In 96.7.1, 96.7.2 b), c) and d) change "15m" to "15 m"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #92.

Remove UTP, see response to comment #514.

Cl **96** *SC* **96.7** *P* **58** *L* **26** # 607

Brillhart, Theodore — Fluke Networks

Comment Type **T** *Comment Status* **A**

Clearly the intention of the diagram is to include the end connectors in the link. So change the diagram text to explicitly include them in the description between the link segment boundaries, or remove the reference to the inline connectors; i.e. both inline and end connectors or niether. To be consistant with the subclause introductory text (lines 24 and 25).
Also, suggest to bring the link segment boundary markers closer to the link locations that they are intended to contain (i.e. make them longer).

SuggestedRemedy

Diagram text -
From: Link segment 15m 1-pair balanced copper cabling with four inline connectors.
To: Link segment 15m 1-pair balanced copper cabling with four inline connectors and two end connectors.
-Or-
From: Link segment 15m 1-pair balanced copper cabling with four inline connectors.
To: Link segment 15m 1-pair balanced copper cabling.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #92. Additionally, make the following changes...

Change "Link segment 15m 1-pair balanced copper cabling with four inline connectors."

To "Link segment up to 15m single balanced twisted-pair cabling with up to four inline connectors and two mating connectors."

Change "End Connectors" to "Mating Connectors" in figure 96-24, and split mating and end connector to two.

Cl **96** *SC* **96.7** *P* **72** *L* **22** # 92

Ran, Adee — Intel

Comment Type **T** *Comment Status* **A**

UTP isn't a synonym of "balanced cabling system", it is more specific. Is there an external specifiaction for the type of cable, like cat-5 in 1000BASE-T?

Link segment may have lower length and fewer connectors.

Also, space required before "m".

SuggestedRemedy

Change "one-pair balanced cabling system" to "one-pair UTP" or a more specific term if it exists.

Change "15m" to "up to 15 m" and "four inline connectors" to "up to four inline connectors" throughout this subclause.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #514 for "single balanced twister-pair".

Change
"15m" to "up to 15 m" and "four inline connectors"
to
"up to four inline connectors" throughout this subclause.

Cl **96** *SC* **96.7** *P* **72** *L* **22** # 261

Thompson, Geoff — GraCaSI

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

Minor grammar and technical wording changes needed.

SuggestedRemedy

Change text to read: The 100BASE-T1 PHY is designed to operate over a one-pair balanced cabling system. The single pair UTP cable supports an effective data rate of 100 Mb/s in each direction simultaneously. The link segment for a 100BASE-T1 PHY system i

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The comment is not complete. The commenter needs to resubmit this.

Cl **96** *SC* **96.7.1** *P* **58** *L* **52** # 560

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **A**

The IEEE Style Manual 12.2 e) says "Dashes should never be used because they can be misconstrued as subtraction signs."
Also, in "in the range of [90 ohm - 110 ohm] (nominal 100 ohm)" there doesn't seem to be a good reason to have the square brackets.

SuggestedRemedy

Change:
"in the range of [90 ohm - 110 ohm] (nominal 100 ohm)" to:
"in the range of 90 ohm to 110 ohm (nominal 100 ohm)"

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.7.1** *P* **59** *L* **2** # 608

Brillhart, Theodore — Fluke Networks

Comment Type **T** *Comment Status* **A**

If mode conversion loss is considered to be a transmission parameter then it should be included in this sentence. If not, then include it in the previous sentence.

SuggestedRemedy

From: The transmission parameters of the link segment include insertion loss, return loss, and characteristic impedance.
To: The transmission parameters of the link segment include insertion loss, return loss, mode conversion loss, and characteristic impedance.
-Or-
From: The transmission parameters contained in this specification ensure that a 1-pair UTP cable link segment will provide a reliable medium.
To: The transmission and mode conversion parameters contained in this specification ensure that a 1-pair UTP cable link segment will provide a reliable medium.

Response *Response Status* **C**

ACCEPT.

Change:
"The transmission parameters of the link segment include insertion loss, return loss, and characteristic impedance."

To:
"The transmission parameters of the link segment include insertion loss, return loss, mode conversion loss, and characteristic impedance."

Cl **96** *SC* **96.7.1** *P* **72** *L* **51** # 412

Tazebay, Mehmet — Broadcom

Comment Type **E** *Comment Status* **A**

33.In 96.7.1 (page 72 line 51, 53), "The cabling system used in Figure 96-24 to support" and "The cabling system components used in Figure 96-24 comprise 1-pair UTP cables up to 15m length" are repetition and redundant.

SuggestedRemedy

Remove "The cabling system used in Figure 96-24 to support"
and
Remove "The cabling system components used in Figure 96-24 comprise 1-pair UTP cables up to 15m length."

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.7.1** *P* **73** *L* **1** # 101

Ran, Adee — Intel

Comment Type **E** *Comment Status* **A**

"Ensure" is absolute verbiage that should be avoided (style manual 10.2.5). Also, will is only used in statements of fact (10.2.2).

SuggestedRemedy

Change

"The transmission parameters contained in this specification ensure that a 1-pair UTP cable link segment will provide a reliable medium"

to

"The transmission parameters contained in this specification are chosen to enable reliable operation over a 1-pair UTP cable link segment".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **96** *SC* **96.7.1.2** *P* **59** *L* **22** # 337

Zimmerman, George — CME Consulting, Inc.

Comment Type **TR** *Comment Status* **A**

Is it really OK to leave the insertion loss undefined between these discrete frequency points? For example, you could have a 30 dB notch between 10 MHz and 33 MHz the way this is defined.

SuggestedRemedy

Write channel insertion loss requirement in equation form similar to other clauses.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Table 96-7 will be replaced with insertion loss equation as seen in '100BASE_T1_Equation.pdf'.

Cl **96** *SC* **96.7.1.2** *P* **73** *L* **13** # 439

Tazebay, Mehmet — Broadcom

Comment Type **T** *Comment Status* **A**

The definition for insertion loss does not specify the proper termination.

SuggestedRemedy

Change "The insertion loss of the channel (one pair 15 meter UTP link segment as shown in Figure 96-24) shall be less than that contained in Table 96-7:"
to "The insertion loss of the link segment as shown in Figure 96-24 when measured with 100 Ohm termination shall be less than values shown in Table 96-7:"

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.7.1.2** *P* **73** *L* **31** # 413

Tazebay, Mehmet — Broadcom

Comment Type **E** *Comment Status* **A**

In 96.7.1.2 (page 73 line 31, 32), "This insertion loss includes the attenuation of the balanced 1-pair UTP cabling pair, equipment cables and connector losses." is not redundant

SuggestedRemedy

Remove "This insertion loss includes the attenuation of the balanced 1-pair UTP cabling pair, equipment cables and connector losses."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Is not redundent?

Use commentors suggested remedy.

Cl **96** *SC* **96.7.1.3** *P* **59** *L* **37** # 626

Hidaka, Yasuo — Fujitsu Laboratories of

Comment Type **E** *Comment Status* **A**

A grammer error.

SuggestedRemedy

Remove the first "shall".
It should be "The return loss of the link segment ..."

Response *Response Status* **C**

ACCEPT.

See response to comment 414.

Cl **96** *SC* **96.7.1.3** *P* **59** *L* **37** # 414

Tazebay, Mehmet — Broadcom

Comment Type **E** *Comment Status* **A**

There is an extra "shall" in "The return loss shall of the link segment in Figure 96-24 shall meet ..." which needs to be removed

SuggestedRemedy

Remove the first shall after "The return loss"

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.7.1.3** *P* **59** *L* **39** # 321

Zimmerman, George — CME Consulting, Inc.

Comment Type **E** *Comment Status* **A**

Write return loss equation frequency ranges in style of other clauses e.g., 1<= f < 20MHz

Same comment applies to 96.7.1.4 Mode conversion

SuggestedRemedy

see comment for remedy.

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy (embedded in comment) to revide the way the frequency values are shows in 96.7.1.3 and 96.7.1.4.

Cl **96** *SC* **96.7.1.4** *P* **59** *L* **46** # 594

Dawe, Piers — Mellanox

Comment Type **T** *Comment Status* **A**

TCL and TCTL aren't explained, or used anywhere else in this draft.
Sdc11, Sdc22, Sdc21 and Sdc12 aren't used anywhere else in this draft

SuggestedRemedy

Remove or spell out TCL and TCTL.
Maybe Sdc11, Sdc22, Sdc21 and Sdc12 should appear in the equation?

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

TCL, TCTL, Sdc11, Sdc22, Sdc21, and Sdc12 need to have definitions describing the meaning of each abbreviation.

Cl **96** *SC* **96.7.2** *P* **60** *L* **18** # 579

Wu, Peter — Marvell

Comment Type **ER** *Comment Status* **A**

Normative requirements on the cabling for PSANEXT and PSAACRF should be in section 96.7.1 Cabling system characteristics.

SuggestedRemedy

Create new subsections for PSANEXT and PSAACRF in 96.7.1.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Move "96.7.2 c)" as "96.7.1.5". And refer to "96.7.1.5" in "96.7.2 c)"

Move "96.7.2 d)" as "96.7.1.6". And refer to "96.7.1.6" in "96.7.2 d)"

Cl **96** *SC* **96.7.2** *P* **60** *L* **5** # 627

Hidaka, Yasuo — Fujitsu Laboratories of

Comment Type **E** *Comment Status* **A**

An edit result of removing a comma with strike bar is left.

SuggestedRemedy

Clean up the edit result.

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.7.2** *P* **74** *L* **23** # 415

Tazebay, Mehmet — Broadcom

Comment Type **E** *Comment Status* **A**

"(NEXT/FEXT) should be "(ANEXT and AFEXT)" as the alien XTALK is being discussed.

SuggestedRemedy

Change "(NEXT/FEXT)" to "(ANEXT and AFEXT)

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.7.2** *P* **74** *L* **23** # 440

Tazebay, Mehmet Broadcom

Comment Type **T** *Comment Status* **A**

The frequency range is missing for PSANEXT

SuggestedRemedy

Insert "where f is the frequency over 1 MHz - 100 MHz range."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Frequency range will be added in the terminology discussed in comment 321.

Cl **96** *SC* **96.7.2** *P* **74** *L* **25** # 416

Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

439.In 96.7.2 (page 74 line 24, 25), there is an unnecessary date inserted in the text.

SuggestedRemedy

Remove "6 November 2014"

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96.7.2** *P* **74** *L* **4** # 102

Ran, Adee Intel

Comment Type **E** *Comment Status* **A**

Item a is unrelated to link segment characteristics. It contains normative statements about the PHY that are "up to each PHY implementer" - so are not really meaningful.

Item b states that the background noise due to thermal is negligible. If so, why mention it at all? there are numerous other negligible effects.

Item c relates to alien crosstalk and is practically an installation-related recommendation. It would be better to move this information to an annex (see 40A for an example).

Items c and d use the terms PSANEXT and PSAACRF which are not defined in this clause (the second is completely new in 802.3). These terms should have explicit definitions and abbreviations should be listed in clause 1.

Item d has a date string embedded in the text.

SuggestedRemedy

Delete items a and b.

Move item c to an annex. State as recommendations, not as normative text.

Define necessary terms and abbreviations appropriately.

Delete "6 November 2014".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 426 for deleting "6 November 2014".

Cl **96** *SC* **96.8.1** *P* **74** *L* **39** # 441

Tazebay, Mehmet Broadcom

Comment Type **T** *Comment Status* **A**

The mechanical connection to a multi-pin connector is missing.

SuggestedRemedy

Insert "2 pins of" before "a multi-pin connector."

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.8.2** *P* **60** *L* **42** # 586
Wu, Peter Marvell

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

this section also lacks specs on common mode output voltage and common-mode-to-differential-mode impedance balance.

SuggestedRemedy

Suggest starting with 1000BASE-T spec.

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **96** *SC* **96.8.2** *P* **60** *L* **42** # 587
Wu, Peter Marvell

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

this section also lacks any specification for MDI fault tolerance.

SuggestedRemedy

Suggest starting with 1000BASE-T spec.

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **96** *SC* **96.8.2** *P* **60** *L* **42** # 588
Wu, Peter Marvell

Comment Type **TR** *Comment Status* **A**

this section lacks a spec on ANEXT from adjacent connectors.

SuggestedRemedy

Suggest starting with PSANEXT spec with 6dB added margin.

Response *Response Status* **U**

ACCEPT.

Change
"The MDI connector mated with a specified one pair UTP cable connector shall meet the electrical requirements specified in Table 96.7.1."

to

"The MDI connector mated with a specified one pair UTP cable connector shall meet the electrical requirements specified in 96.7.1, except for return loss, and 96.7.2."

Cl **96** *SC* **96.8.2** *P* **74** *L* **45** # 417
Tazebay, Mehmet Broadcom

Comment Type **E** *Comment Status* **A**

Wrong table reference in "Table 96.7.1"

SuggestedRemedy

Change "Table 96.7.1" to "Table 96.7"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #588.

Cl **96** *SC* **96.8.2** *P* **74** *L* **45** # 178
Remein, Duane Huawei Technologies

Comment Type **E** *Comment Status* **A**

Table 96.7.1. should be section ref

SuggestedRemedy

change to 96.7.1

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #588.

Cl **96** *SC* **96.8.2** *P* **74** *L* **45** # 103

Ran, Adee Intel

Comment Type **E** *Comment Status* **A**

The cross reference links to subclause 96.7.1, which is not a table.

It seems that a mated pair of MDI connectors should have different electrical requirements than a full link segment (96.7.1) which contains two such pairs along with possible some additional connectors and cable.

Some requirements are listed in the following subclauses.

SuggestedRemedy

Create the table to summarize the mated pair characteristics and link to it.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #588

Cl **96** *SC* **96.8.2.1** *P* **74** *L* **47** # 248

Remein, Duane Huawei Technologies

Comment Type **TR** *Comment Status* **A**

Because you have already required "the electrical requirements specified in 96.7.1." this statement, which is identical at the moment to 96.7.1.1, is a duplicate requirement. Specifying the same thing is two different location is always a bad idea.

SuggestedRemedy

Strike this section

Response *Response Status* **W**

ACCEPT.

Cl **96** *SC* **96.8.2.2** *P* **61** *L* **1** # 110

Gardner, Andrew Linear Technology Co

Comment Type **T** *Comment Status* **R**

The MDI RL lower corner frequency specification in 96.8.2.2 is burdensome for data line powered device applications because of the constraint it places on the coupling inductors. Increasing the 20dB RL lower corner frequency from 1MHz to 1.8MHz will reduce the required minimum coupling inductance from approx 40uH to approx 22uH with relatively minor impact on PHY performance. This reduction will allow the required current to be delivered to a data line powered device while still meeting application constraints for inductor volume, parasitic resistance (DCR), and self-resonant frequency (SRF).

SuggestedRemedy

For 100BASE-T1 data line powered devices, it is proposed that the MDI RL requirement be modified per below in order to ease the requirement on the coupling inductors. Clause 104 (802.3bu) should incorporate the modified MDI RL specification for data line powered devices, and the following informative note should be incorporated in Clause 96 after subclause 96.8.2.2 in order to direct the reader to Clause 104:
Note: Data line powered devices should refer to Clause 104 for the relevant MDI RL specification.

Corresponding paragraph in Clause 104:

104.TBD MDI Return Loss for 100BASE-T1 Data Line Powered Devices

The MDI return loss (RL) shall meet or exceed the following equation for all frequencies from DC to 66 MHz (with 100 ohm reference impedance) at all times when the PHY is transmitting data or control symbols.

Return Loss (dB): 20 x log(SQRT(1 + (2 x pi x f x (2 x 22 microH)/50 Ohm)^2)) for f = DC - 1.8 MHz
20 for f = 1.8 - 30 MHz
20 - 20 x log(f/30) for f = 30 - 66 MHz

Response *Response Status* **C**

REJECT.

Requires further discussions between 802.3bw and 802.3bu.

Cl **96** *SC* **96.8.2.2** *P* **61** *L* **1** # 158

Dwelley, Dave — Linear Technology Co

Comment Type **T** *Comment Status* **R**

The MDI RL lower corner frequency specification in 96.8.2.2 is burdensome for data line powered device applications because of the constraint it places on the coupling inductors. Increasing the 20dB RL lower corner frequency from 1MHz to 1.8MHz will reduce the required minimum coupling inductance from approx 40uH to approx 22uH with relatively minor impact on PHY performance. This reduction will allow the required current to be delivered to a data line powered device while still meeting application constraints for inductor volume, parasitic resistance (DCR), and self-resonant frequency (SRF).

SuggestedRemedy

For 100BASE-T1 data line powered devices, it is proposed that the MDI RL requirement be modified per below in order to ease the requirement on the coupling inductors. Clause 104 (802.3bu) should incorporate the modified MDI RL specification for data line powered devices, and the following informative note should be incorporated in Clause 96 after subclause 96.8.2.2 in order to direct the reader to Clause 104:
Note: Data line powered devices should refer to Clause 104 for the relevant MDI RL specification.

-> Corresponding paragraph in Clause 104:

104.TBD MDI Return Loss for 100BASE-T1 Data Line Powered Devices

The MDI return loss (RL) shall meet or exceed the following equation for all frequencies from DC to 66 MHz (with 100 ohm reference impedance) at all times when the PHY is transmitting data or control symbols.

Return Loss (dB): 20 x log(SQRT(1 + (2 x pi x f x (2 x 22 microH)/50 Ohm)^2)) for f = DC - 1.8 MHz
20 for f = 1.8 - 30 MHz
20 - 20 x log(f/30) for f = 30 - 66 MHz

Response *Response Status* **C**

REJECT.

See response to comment #110.

Cl **96** *SC* **96.8.2.2** *P* **75** *L* **1** # 249

Remein, Duane — Huawei Technologies

Comment Type **TR** *Comment Status* **A**

Above you state that the connector must meet "the electrical requirements specified in 96.7.1." which include a Return Loss spec. in 96.7.1.3, part of 96.7.1.
Thus you have created conflicting requirements.

SuggestedRemedy

Resolve the conflict by dropping 96.8.2.2 or being more specific about which parts of 96.7.1 apply to the connector and which do not.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #588.

Cl **96** *SC* **96.9** *P* **61** *L* **17** # 582

Wu, Peter — Marvell

Comment Type **T** *Comment Status* **A**

The delay constraint requires more precision on the measurement.

SuggestedRemedy

add the text "The reference point for all MDI measurements is the peak point of the mid-cell transition corresponding to the reference code-bit, as measured at the MDI."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #93.

Cl **96** *SC* **96.9** *P* **75** *L* **14** # 93

Ran, Adee — Intel

Comment Type **T** *Comment Status* **A**

The "twisted pair" is not a specific point at which delay can be defined.

SuggestedRemedy

Change "twisted pair" to "MDI", twice.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96B.1** *P* **67** *L* **30** # 630
Hidaka, Yasuo Fujitsu Laboratories of

Comment Type **E** *Comment Status* **A**

The box of 100BASE-T1 PCS Transmit is marked as selected.

SuggestedRemedy

De-select the box of 100BASE-T1 PCS Transmit.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96B.1** *P* **67** *L* **39** # 629
Hidaka, Yasuo Fujitsu Laboratories of

Comment Type **E** *Comment Status* **A**

Figure caption is missing for Figure 96B-1.

SuggestedRemedy

Add a figure caption for Figure 96B-1.

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96B.1.1** *P* **67** *L* **46** # 631
Hidaka, Yasuo Fujitsu Laboratories of

Comment Type **E** *Comment Status* **A**

Section level is inconsistent between internal and external loopback functions.

SuggestedRemedy

Change the section of External Loopback Function as 96B.2.

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96B.1.1** *P* **68** *L* **19** # 632
Hidaka, Yasuo Fujitsu Laboratories of

Comment Type **E** *Comment Status* **A**

Caption is missing for Figure 96B-2.

SuggestedRemedy

Add a caption to Figure 96B-2.

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96** *SC* **96B.1.1** *P* **68** *L* **6** # 633
Hidaka, Yasuo Fujitsu Laboratories of

Comment Type **E** *Comment Status* **A**

Highlight of spell checker is left.

SuggestedRemedy

Remove highlight of spell checker from 3 locations.

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **Fig 96-2** *P* **34** *L* **1** # 312
Thompson, Geoff GraCaSI

Comment Type **ER** *Comment Status* **A**

Figure doesn't match 802.3 style and uses color without a key for what the colors mean.

SuggestedRemedy

Redraw the figure before the draft goes to Sponsor Ballot. The new figure should have boxes with corners and all of the text should be black. There is no need to color the boxes unless there is a meaning attributed to the colorization. If there is mean

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #553.

Cl **96** *SC* **Fig 96-2** *P* **34** *L* **1** # 313

Thompson, Geoff GraCaSI

Comment Type **ER** *Comment Status* **A**

Figure isn't referred to in the text.

SuggestedRemedy

Delete the figure.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

On page 33, Lines 26 and 27:

Change: "100BASE-T1 uses the following service primitives to exchange symbol vectors, status indications, and control signals across the service interface:"

To:

"As shown in Figure 96-2, 100BASE-T1 uses the following service primitives to exchange symbol vectors, status indications, and control signals across the service interface:"

Cl **96** *SC* **Figure 96-15** *P* **59** *L* **5** # 370

Lusted, Kent Intel

Comment Type **E** *Comment Status* **A**

The term BroadR-Reach is used but not defined anywhere. Perhaps this is supposed to be 100BASE-T1?

SuggestedRemedy

Change if necessary

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 577.

Cl **96** *SC* **Figure 96-15—PHY Co** *P* **45** *L* # 604

Carlson, Steven High Speed Design.c

Comment Type **E** *Comment Status* **A**

Typo in link_control = DISABLE + pma_reset=ON state has DISABLE BroadR-Reach TRANSMITTER.

SuggestedRemedy

Replace text with DISABLE 1000BASE-T1 TRANSMITTER

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change
"BroadR-Reach TRANSMITTER"
to
"100BASE-T1 TRANSMITTER"

Cl **96** *SC* **Figure 96-23** *P* **71** *L* **32** # 371

Lusted, Kent Intel

Comment Type **E** *Comment Status* **A**

The term BroadR-Reach is used but not defined anywhere. Perhaps this is supposed to be 100BASE-T1?

SuggestedRemedy

Change if necessary

Response *Response Status* **C**

ACCEPT.

See response to comment #407.

Cl **96** *SC* **General** *P* **0** *L* **0** # 315

Thompson, Geoff GraCaSI

Comment Type **ER** *Comment Status* **R**

The term vector" is broadly used throughout the draft. It is not a defined term in 802.3 (though I admit the term is used in earlier amendments"," it is not defined)

SuggestedRemedy

Add definition for "vector" to the main definitions clause.

Response *Response Status* **W**

REJECT.

As the Commenter acknowledges this currently exists in the 802.3 Standard, therefore the commenter is respectfully requested to submit a maintenance request.

Cl **96.1** *SC* **96.1.1** *P* **15** *L* **20** # 375

Matola, Larry Delphi

Comment Type **E** *Comment Status* **A**

over one pair unshielded twisted pair (UTP) or better cable

Definition of UTP is moved to line 10
Why the need for or better?

SuggestedRemedy

over one pair (UTP) cable

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change
"one pair unshielded twisted pair (UTP) or better cable"

to

"single balanced twisted-pair"

See response to comment #514.

Cl **96.1** *SC* **96.1.2.2** *P* **16** *L* **9** # 376

Matola, Larry Delphi

Comment Type **E** *Comment Status* **A**

onto the balanced one pair twisted pair cable medium

Consistancy on name of cable

SuggestedRemedy

onto the balanced one pair UTP cable

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Consistently use "single balanced twisted-pair". See response to comment # 514.

Cl **96.1** *SC* **N/A** *P* **15** *L* **10** # 374

Matola, Larry Delphi

Comment Type **E** *Comment Status* **A**

interface over one pair of UTP cable

UTP (Abbreviation) is used before it is identified

SuggestedRemedy

over one pair unshielded twisted pair (UTP) cable.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change
"one pair of UTP cable"

to

"single balanced twisted-pair"

See response to comment #514.

Cl **96.1.** *SC* *P* **29** *L* **19** # 519

Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**

poor wording

SuggestedRemedy

Replace: The followings are

With: The following are

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96.2.** *SC* *P* **32** *L* **26** # 484
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**
double period

SuggestedRemedy
Replace: configuration..

With: configuration.

Response *Response Status* **C**
ACCEPT.

Use commentors suggested remedy.

Cl **96.2.** *SC* *P* **32** *L* **32** # 485
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**
unneeded comma

SuggestedRemedy
Replace: DISABLE, or ENABLE

With: DISABLE or ENABLE

Response *Response Status* **C**
ACCEPT.

Use commentors suggested remedy.

Cl **96.3.** *SC* *P* **40** *L* **41** # 487
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**
Most definitions in this section use the variable name, not "it".

Also, the diagram can't generate any variables, it is just a representation of how they are set.

SuggestedRemedy
Replace: It is generated by PCS Data Transmission Enabling state diagram as specified in

With: The tx_enable_mii parameter generated by PCS Transmit Enable as specified in

Response *Response Status* **C**
ACCEPT.

Cl **96.3.** *SC* *P* **40** *L* **44** # 488
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**
Most definitions in this section use the variable name, not "it".

Also, the diagram can't generate any variables, it is just a representation of how they are set.

SuggestedRemedy
Replace: It is generated by PCS Data Transmission Enabling state diagram as specified in

With: The tx_error_mii parameter generated by PCS Transmit Enable as specified in

Response *Response Status* **C**
ACCEPT.

Cl **96.3.** *SC* *P* **40** *L* **93** # 486
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**
Editing marks left in document

SuggestedRemedy
Delete : with strikethrough in it after: tx_enable_mii and tx_error_mii

Response *Response Status* **C**
ACCEPT.

Cl **96.3.** *SC* *P* **41** *L* **35** # 489
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**
editing marks left in document

SuggestedRemedy
remove are with strikethrough in: 6 consecutive symbols areis generated
NOTE: strikethrough does not copy

Response *Response Status* **C**
ACCEPT.

See repsonse to comment 285.

Cl **96.3.** SC P **41** L **37** # 490

Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**

Extraneous explanation of how 100BASE-T1 is different.

SuggestedRemedy

Replace: Unlike 100BASE-TX or 1000BASE-T where symbols shall be exclusively assigned for TX_ER assertion occurrence, 100BASE-T1 only has one special symbol pair (0, 0) that is not used by Idle or Data symbols. Therefore, rather than insert ERROR symbols at the place TX_ER is asserted, in 100BASE-T1, at the end of data packet, tx_error is examined to determine whether ESD3 or ERR_ESD3 shall be transmitted following two consecutive special pairs (0, 0) for ESD1 and ESD2, as shown in Figure 96-6.

With: 100BASE-T1 has one special symbol pair (0, 0) that is not used by Idle or Data symbols. At the end of the data packet, tx_error is examined to determine whether ESD3 or ERR_ESD3 shall be transmitted following two consecutive special pairs (0, 0) for ESD1 and ESD2, as shown in Figure 96-6.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #291.

Cl **96.3.** SC P **41** L **51** # 491

Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**

poor wording

SuggestedRemedy

Replace: If TXMODE has the value SEND_N, PCS Transmit generates symbol An, at each symbol period, that are representing data,

With: If TXMODE has the value SEND_N, PCS Transmit generates symbol An at each symbol period representing data,

Response *Response Status* **C**

ACCEPT.

Cl **96.3.** SC P **48** L **8** # 492

Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**

Incorrect formatting

SuggestedRemedy

The "n" in "TAn" and "TBn" in "Generation of (TAn, TBn) when TXMODE = SEND_I" should be subscripts.

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy. Additionally italicize "TAn" and "TBn".

Cl **96.3.** SC P **53** L **25** # 494

Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**

Editing marks left in document

SuggestedRemedy

Remove underline below "."

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96.3.** SC P **54** L **14** # 495

Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**

poor grammar

SuggestedRemedy

Replace: When PMA Receive indicates normal operations and sets

With: When PMA Receive indicates normal operation and sets

Response *Response Status* **C**

ACCEPT.

Cl **96.3.** *SC* **Table 96-1** *P* **48** *L* **15** # 493
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**
Editing marks left in document

SuggestedRemedy
Remove "dle" with strikethrough and underline beneath "Idle" in the title.

Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See response to comment 35.

Cl **96.4.** *SC* *P* **57** *L* **20** # 496
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**
poor wording

SuggestedRemedy
Replace: using the transmit clock TX_TCLK in 66.666 MHz frequency which

With: using the transmit clock TX_TCLK of 66.666 MHz which

Response *Response Status* **C**
ACCEPT.

Cl **96.4.** *SC* *P* **62** *L* **8** # 497
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**
formatting error

SuggestedRemedy
Indent: if config = SLAVE. This timer is used jointly in the PHY Control and Link Monitor state diagrams.

Response *Response Status* **C**
ACCEPT.

See response to comment 616.

Cl **96.5.** *SC* *P* **62** *L* **35** # 498
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**
poor grammar

SuggestedRemedy
Replace: In a real application radiofrequency

With: In a real application, radio frequency

Response *Response Status* **C**
ACCEPT.

Cl **96.5.** *SC* *P* **62** *L* **45** # 499
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **R**
Incorrect heading level

SuggestedRemedy
Section 96.5.1.3 should be 96.5.2 as this is not part of the EMC requirement, but is another Electrical Specification.

Response *Response Status* **C**
REJECT.

See response to comment 78. This section is propsed to be deleted.

Cl **96.5.** SC P **63** L **21** # 500

Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**

poor grammar

SuggestedRemedy

Replace: For example, a PHY transmitting 40 symbols (600 ns) will be long enough for a 500 ns droop measurements.

With: For example, a PHY transmitting 40 symbols (600 ns) will be long enough for a 500 ns droop measurement.

Response *Response Status* **C**

ACCEPT.

Change
"For example, a PHY transmitting 40 symbols (600 ns) will be long enough for a 500 ns droop measurements."
to
"For example, a PHY with test mode 1 enabled and N = 40 symbols (symbol period of 600 ns) would transmit a pattern sufficently long enough for a 500 ns droop measurement."

Cl **96.5.** SC P **66** L **33** # 501

Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**

Remove editing marks left in document

SuggestedRemedy

Remove underlines from both commas in the following: The peak distortion values, measured at a minimum of 10 equally-spaced phases of a single symbol period, shall be less than 15 mV.

Response *Response Status* **C**

ACCEPT.

Will remove underline from text in 96.5.4.2.

Cl **96.5.** SC P **69** L **5** # 520

Wienckowski, Natalie General Motors

Comment Type **T** *Comment Status* **A**

uncommon word usage

SuggestedRemedy

Replace: to 3 discrete differential voltage levels [-1, 0, +1] volts orrespondingly

With: to 3 discrete differential voltage levels [-1, 0, +1] volts, respectively

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 411.

Cl **96.5.** SC P **71** L **14** # 502

Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**

editing marks left in document

SuggestedRemedy

Remove "of" with strikethrough and underline below "to" in the following: This specification is provided to verify the DUT's tolerance ofto alien crosstalk noise."

Response *Response Status* **C**

ACCEPT.

See response to comment 258.

Cl **96.5.** *SC* *P* **71** *L* **32** # 504
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**

Don't want reference to BroadR-Reach and missing close parenthesis.

SuggestedRemedy

Replace: NOISE SOURCE (BroadR-Reach 100Mbps COMPLIANT
TRANSMITTER SENDING IDLES NONSYNCHRONOUS
TO THE BroadR-Reach TRANSMITTER UNDER TEST

With: NOISE SOURCE (100BASE-T1 100Mbps COMPLIANT
TRANSMITTER SENDING IDLES NONSYNCHRONOUS
TO THE 100BASE-T1 TRANSMITTER UNDER TEST)

Response *Response Status* **C**

ACCEPT.

See response to comment #407.

Cl **96.5.** *SC* **Figure 96-23** *P* **71** *L* # 503
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**

Incorrect symbol/name for "ohms"

SuggestedRemedy

Replace "O" on all resistors with ohm symbol or "Ohms".

Response *Response Status* **C**

ACCEPT.

See response to comment 38.

Cl **96.6** *SC* *P* **71** *L* **41** # 505
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**

extraneous comma

SuggestedRemedy

Replace: 100BASE-T1 makes use of the management functions provided by the MII Management Interface specified in 22.2.4,

With: 100BASE-T1 makes use of the management functions provided by the MII Management Interface specified in 22.2.4

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96.7** *SC* **96.7.1** *P* **59** *L* **1** # 377
Matola, Larry Delphi

Comment Type **E** *Comment Status* **A**

1-pair UTP cable
Consistancy

SuggestedRemedy

one pair UTP cable

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #514.

Cl **96.7.** *SC* *P* **74** *L* **25** # 508
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**

Extraneous date in document, updates with each document release

SuggestedRemedy

Remove date: equally spaced)6 November 2014 shall be

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment 426.

Cl **96.7.** *SC* **a** *P* **74** *L* **5** # 506
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**

Editing marks left in document

SuggestedRemedy

remove comma with strikethrough in: the same cable pair, is caused

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96.7.** *SC* **a** *P* **74** *L* **9** # 507
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**

Editing marks left in document

SuggestedRemedy

Remove space with strikethrough (or random -) at end of line.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The "-" is intentional as it is part of "-140 dB/Hz", however the line break in the middle of the value was not intentional.

Will correct this.

Cl **96.8.** *SC* *P* **50** *L* **42** # 381
Matola, Larry Delphi

Comment Type **T** *Comment Status* **A**

The section states "The MDI connector mated with a specified one pair UTP cable connector shall meet the electrical requirements specified
in Table 96.7.1."
then sub clause 96.8.2.1 and 96.8.2.2 call out specific MDI Characteristic Impedance and Return Loss values.
This seems like redundant information since it is also found above

SuggestedRemedy

Delete sub clause 96.8.2.1 and 96.8.2.2

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #588.

Cl **96.8.** *SC* *P* **75** *L* **4** # 509
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **A**

Editing marks left in document.

SuggestedRemedy

Remove underline from (RL).

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **96.8.** *SC* **96.8.2.1** *P* **60** *L* **50** # 373
Matola, Larry Delphi

Comment Type **E** *Comment Status* **A**

Characteristic impedance of any mated in-line connectors shall be 100 ohm +/-10% measured with TDR and rise-time set
not slower than 700 psec.

Section refers to MDI connector and text says in-line

SuggestedRemedy

Characteristic impedance of any mated MDI connectors shall be 100 ohm +/-10% measured with TDR and rise-time set
not slower than 700 psec.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove
"96.8.2.1 MDI Characteristic Impedance
Characteristic impedance of any mated in-line connectors shall be 100 ohm +/-10% measured with TDR and rise-time set
not slower than 700 psec."

Page PDF 74 line 39, append "Characteristic impedance of any mated MDI connector shall be 100 ohm +/-10% measured with TDR and rise-time set not slower than 700 psec."

Cl **96A** *SC* *P* **65** *L* **13** # 329

Zimmerman, George — CME Consulting, Inc.

Comment Type **ER** *Comment Status* **A**

Comments about "Typical standard Ethernet PHYs" seem general and not related to this PHY.

SuggestedRemedy

Delete Sentence beginning with "Typical standard Ethernet", and replace "So, PHY control settings..." with "100BASE-T1 PHY control settings..."

Response *Response Status* **W**

ACCEPT.

Cl **96A** *SC* **96A** *P* **65** *L* **1** # 580

Wu, Peter — Marvell

Comment Type **ER** *Comment Status* **A**

This section provides no new information beyond what is provided in Clause 45.

SuggestedRemedy

Delete this section.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This will be resolved when Clause 45 changes are completed.

Cl **96A** *SC* **96A** *P* **79** *L* **1** # 200

Remein, Duane — Huawei Technologies

Comment Type **ER** *Comment Status* **A** *CL45/22*

I believe this is superfluous, you mention CL 45 and MDIO in CL 96 this annex is not needed

SuggestedRemedy

Drop the annex.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See response to comment 580.

Cl **96B** *SC* *P* **81** *L* **1** # 365

D'Ambrosia, John — Dell

Comment Type **TR** *Comment Status* **R**

This text seems to imply a test mode. Is it normative requirement for PHY? This reads like a feature, as opposed to some statement whether it needs to be supported or not. Only two inferences found in the document of this text.

SuggestedRemedy

Specify whether these test modes are required and normative

Response *Response Status* **W**

REJECT.

These tests modes are not required. Annex 96B is informative.

Cl **96B** *SC* **96B** *P* **67** *L* **1** # 581

Wu, Peter — Marvell

Comment Type **ER** *Comment Status* **R**

This section describes two test modes but has no normative requirements to support them.

SuggestedRemedy

Suggest adding PCS loopback requirement in PCS section, enabled by 3.0.14.

Response *Response Status* **C**

REJECT.

These tests are not required for normal operation mode. See response to comment #365.

Cl **96B** *SC* **96B** *P* **81** *L* **6** # 104

Ran, Adee — Intel

Comment Type **E** *Comment Status* **R**

Test modes, even if optional, should be defined in the main clause, not in an annex.

SuggestedRemedy

Move these test modes to the appropriate place in clause 96 - most likely the PCS subclause for internal loopback and the PMA subclause for external loopback.

Define how these modes are enabled (e.g. MDIO registers).

Response *Response Status* **C**

REJECT.

See response to comment #365.

Cl **99** *SC* *P* *L* # 522

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **A**

Page iii of the frontmatter contains "Special characters can be inserted via File, Utilities, Character palette using the Hex number." and Table 00-1.
This should not be part of the draft frontmatter

SuggestedRemedy

Remove the text and table.

Response *Response Status* **C**

ACCEPT.

Cl **99** *SC* *P* *L* # 361

D'Ambrosia, John — Dell

Comment Type **ER** *Comment Status* **A**

use of color text / figures? Is this permitted? However, regardless, user may print out in black/white which then means color will not necessarily communicate its intended message.

SuggestedRemedy

Consult style guide. Remove all color

Response *Response Status* **W**

ACCEPT.

See response to comment #553.

Cl **99** *SC* *P* **1** *L* **1** # 128

Grow, Robert — RMG Consulting

Comment Type **ER** *Comment Status* **A**

PDF page 11 - For some reason, page numbering restarts here rather than continuous numbering of front matter.

SuggestedRemedy

Use continuous page numbering for front matter.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #198.

Cl **99** *SC* *P* **1** *L* **20** # 609

Maguire, Valerie — Siemon 1

Comment Type **E** *Comment Status* **A**

Extraneous "." at the end of the amendment title. This error occurs on page 1 and 15 of the .pdf file.

SuggestedRemedy

Delete "." at the end of the amendment title.

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **99** *SC* *P* **1** *L* **49** # 116

Grow, Robert — RMG Consulting

Comment Type **E** *Comment Status* **A**

PDF page 15 - 802.3bk is not a parallel amendment project, it is an approved amendment. Certainly editing instructions should indicate the source for the text or reference for the instruction, and that would include approved amendments, but this note is primarily for allowing an editing instruction to point to text from another project yet to be approved.

SuggestedRemedy

As 802.3bw is projected to be the next approved amendment, the only valid parallel project should be to the revision project P802.3bx and the word 'amendment' should be stricken from the next to last line and example changed.

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **99** *SC* *P* **2** *L* **7** # 117

Grow, Robert — RMG Consulting

Comment Type **E** *Comment Status* **A**

PDF page 16 - Format error.

SuggestedRemedy

References use a comma after the document number not a hyphen.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Will conform to appropriate IEEE format.

Cl **99** *SC* *P* **29** *L* **1** # 357

D'Ambrosia, John Dell

Comment Type **ER** *Comment Status* **R**

The document should be written in accordance with accepted norms today.

SuggestedRemedy

REview the form of the draft in relation to recently approved specifications. other commments will address specific items.

Response *Response Status* **W**

REJECT.

Comment and suggested remedy are not specific.

Cl **99** *SC* *P* **4** *L* **1** # 127

Grow, Robert RMG Consulting

Comment Type **ER** *Comment Status* **A**

page iv - The draft front matter does not follow the IEEE-SA Style Manual

SuggestedRemedy

Correct order of components of front matter.

Response *Response Status* **W**

ACCEPT.

Cl **99** *SC* *P* **4** *L* **3** # 129

Grow, Robert RMG Consulting

Comment Type **ER** *Comment Status* **A**

page iv - The note unfortunately is not correct. The D1.2 draft uses publication page numbering, not our consistent Arabic page numbers for balloting.

SuggestedRemedy

Please follow 802.3 balloting convention for numbering with future drafts.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #198.

Cl **99** *SC* *P* **5** *L* **27** # 131

Grow, Robert RMG Consulting

Comment Type **TR** *Comment Status* **A**

page v - Front matter should reflect the plan for the amendment. It is not correct for either amending 802.3-2012, or 802.3-20xx

SuggestedRemedy

In either case, it is customary to add a description of the amendment (i.e., description of IEEE Std 802.3bw) so that balloters agree on the text to appear in front matter of subsequent amendments. If planned as an amendment to 802.3-2012, then the list of descriptions is incomplete, it should include 802.3bj and 802.3bm in addition to the description of 802.3bw.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

This document will actually be an ammendment to 802.3-2015. List of parallel ammendments will be changed to reflect this.

Cl **99** *SC* *P* **8** *L* **1** # 112

Grow, Robert RMG Consulting

Comment Type **E** *Comment Status* **A**

Bank page viii

SuggestedRemedy

Remove.

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **99** *SC* *P* **i** *L* **28** # 159

Brandt, David — Rockwell Automation

Comment Type **E** *Comment Status* **A**

The purpose of this version of the amendment is mis-stated.

SuggestedRemedy

Replace:
The purpose of this version of the amendment is to
provide the preview of the draft to the 802.3 Working Group in anticipation of voting the draft to Working
Group Ballot during the San Antonio plenary.
With:
The purpose of this version of the amendment is to
provide a draft for initial Working Group ballot.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change to "This amendment adds Physical Layer specifications and management parameters for 100 Mb/s operation ove a single balanced twisted-pair cable (100BASE-T1). Draft D2.1 is prepared for Working Group Ballot recirculation. This draft expires 6 months after the date of publication or when the next version is published, whichever comes first."

Cl **99** *SC* *P* **v** *L* **13** # 156

Amason, Dale — Freescale

Comment Type **ER** *Comment Status* **A**

Task Force name should be replaced with 100BASE-T1. Same issue for lines 14 & 15.

SuggestedRemedy

Change "Task Force name" to 100BASE-T1

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Use commentors suggested remedy on page vii

Cl **99** *SC* **99** *P* **19** *L* **1** # 384

Hajduczenia, Marek — Bright House Network

Comment Type **ER** *Comment Status* **A**

FAIL - Notes for editors (not to be included in the published draft)

SuggestedRemedy

Such stuff is to be removed prior to publication, even within the Workging Group

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Editors notes will be removed in next draft.

Cl **99** *SC* **99** *P* **6** *L* **18** # 165

Law, David — HP

Comment Type **E** *Comment Status* **A**

Please include the working group balloter list supplied in the file <IEEE_P802d3bw_WG_names.pdf>.

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT.

Use commentors suggested remedy.

Cl **99** *SC* **99** *P* **ii** *L* # 591

Dawe, Piers — Mellanox

Comment Type **E** *Comment Status* **A**

The term "Automotive Cable" is not used anywhere else in this draft.

SuggestedRemedy

Delete.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #514.

Cl **99** *SC* **Participants** *P* **7** *L* **13** # 19

Ran, Adee Intel

Comment Type **ER** *Comment Status* **A**

Task force has a name.

SuggestedRemedy

Change "IEEE P802.3bw Task Force name" to "IEEE P802.3bw 100BASE-T1", 3 times.

Response *Response Status* **W**

ACCEPT.

See response to comment 156.

Cl **Annex** *SC* **Annex 96A** *P* **79** *L* **1** # 394

Hajduczenia, Marek Bright House Network

Comment Type **TR** *Comment Status* **A** *CL45/22*

The purpose of this Annex evades me. MDIO is a pervasive management interface for all 802.3 PHYs and the text included in Annex 96A right now neither add anything new, nor justify the need for a separate Annex for this brief statement

SuggestedRemedy

Remove this Annex in the current form. If anything specific to management is needed, we have 802.3.1 for this purpose (MIB definition).

Response *Response Status* **W**

ACCEPT.

Cl **Annex** *SC* **Annex 96B** *P* **81** *L* **1** # 393

Hajduczenia, Marek Bright House Network

Comment Type **T** *Comment Status* **R**

It is not clear whether these two loopback modes are specific to 100BASE-T1 or they would be shared by other PHYs. I know for a fact that smilar loopback modes are supported by other PHYs, so if there is really a need for such text, it should be made PHY independent.

SuggestedRemedy

Either make this text PHY independent (and applicable to any PHY type) or remove this Annex altogether.

Response *Response Status* **C**

REJECT.

See response to comment #365.

Cl **Previ** *SC* *P* *L* # 380

Matola, Larry Delphi

Comment Type **E** *Comment Status* **A**

over one pair unshielded twisted pair(UTP) cable

Since this is the Automotive Spec would it be proper to refer to UTP cable as Automotive cable per our definition This replacement occurs multiple places reference my comments 3-6

SuggestedRemedy

over one pair Automotive cable

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response comment #514.