Cl **FM** *SC* *P* **12** *L* **16** # 87

Remein, Duane Huawei

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

Is 802.3bp really the only PHY 802.3 defines that needs to be restricted to automotive application? *02.3 has ALWAYS been agnostic on where it's MAC and PHYs are applied. The more the merrier! Note that 802.3bw, the origional "automotive" application PHY does not make such a restriction. (see below)

Note this comment is in agreement with unsatisfied comments #292, #44 Draft 2.0
We should not begin restricting the application of new PHYs now.

IEEE Std 802.3bw™-201x
This amendment includes changes to IEEE Std 802.3-201x and adds Clause 96. This amendment adds 100 Mb/s Physical Layer (PHY) specifications and management parameters for operation on a single balanced twisted-pair copper cable.

SuggestedRemedy

Scrub the entire draft for instances where there is an explicit or implied restriction to automotive applications and remove these restrictions. It is fine to include necessary restrictions when a PHY is intended to be used in these rigourous applications but such assumptions should not apply to the basic PHY. Below are a two instances that need fixing:
Pg Line
2 3
12 16

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change the text to read: "This amendment to IEEE Std 802.3-201x adds point-to-point 1 Gb/s Physical Layer (PHY) specifications and management parameters for operation on a single balanced twisted-pair in automotive and other applications not utilizing the structured wiring plant."

Cl **FM** *SC* **FM** *P* **1** *L* **1** # 52

Anslow, Pete Ciena

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

Now that the 802.3bx revision has been approved by the IEEE SASB, the "base_year" variable in all files should be changed from 201x to 2015.
This seems to have been done in the headers of all files, but there are still some instances of 201x that should be 2015.

SuggestedRemedy

Change 201x to 2015:
Page 1, lines 2 and 26
Page 2, line 1
Page 11, line 31

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **FM** *SC* **0** *P* **1** *L* **17** # 50

Booth, Brad Microsoft

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

I'm a bit confused by the response to comment #64 from D2.0. The response reads:
Per discussion in TF, there are multiple different applications, in which 1000BASE-T1 will be operated over a pair of twisted wires, no exterior cable jacket will be present, especially in the middle of cable bundles. The requirement to include exterior cable jacket for all 1000BASE-T1 applications would increase the bundle size, which is highly undesirable.

The comment suggested adding "cable" to some of the terms used, but the response seems to imply that the use of "cable" carries baggage that the task force would prefer to avoid.

If the term "cable" is not valid for this project, then why is it used in the PAR and in the title of the amendment?

The issue that was trying to be brought forward in the previous comment is that the task force uses the term twisted-pair and twisted pair in an inconsistent manner. "Twisted pair" is defined in 1.4.396 and appears to match the two wire definition being used but does call it a cable element. "Twisted-pair" is undefined in 802.3, but there are definitions for twisted-pair cable and twisted-pair link. If this is not how the task force wants to use the existing terms, then it is highly recommended that new terminology be created that doesn't conflict with already defined 802.3 terms.

As an example, the title of the amendment is consistent with the first paragraph describing the amendment. One calls it, "single twisted pair copper cable" and the other calls it, "single balanced twisted-pair."

SuggestedRemedy

Create a new definition in 1.4.xxx that defines "single twisted pair copper cable" as "two insulated conductors twisted together in a regular fashion to form a balanced transmission line without an overall shield or jacket around the conductors."

Replace uses of "single balanced twisted-pair", "single twisted-pair" and "single twisted pair" with the new defined term that matches the project title and the PAR, "single twisted pair copper cable".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* *L* # 91

Remein, Duane Huawei

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

I wish to concurr with comment #64 from Draft 2.0 review.

SuggestedRemedy

See comment #64 (or a new comment should the origional commenter resubmit)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #50.

Cl **00** *SC* **0** *P* **30** *L* **1** # 75

Remein, Duane Huawei

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

Something got messed up with the template as line numbers are suddenly on left side of the page.
Also an issue on pg 60, 122 (where it begins to alternate), 140 (always on left) ...

SuggestedRemedy

Realign with template so line numbers are on the right.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Overrides will be re-applied

Cl **00** *SC* **0** *P* **35** *L* **3** # 7

Ran, Adee Intel

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

"Low power" is "ability" in the title of 45.2.1.134.4, "feautre" in the text of that subclause, and "mode" in table 45-98d. Then in 45.2.1.133.3 it is "low power mode feature".

We should be consistent and clear. Usually thingies have optional abilities that can be either supported or not; if supported, they can be enabled or disabled, or put on one mode or another.

Compare to EEE ability (45.2.1.134.2) which is either supported or not.

SuggestedRemedy

Change description of bit 1.2305.8 in table 45-98d to "has low-power ability" (and similarly for the 0 case).

In 45.2.1.134.4 change all "low-power feature" to "low-power ability".

In 45.2.1.133.3 change "low-power mode feature" to "low-power abiilty".

Change other occurrences to be consistent as necessary.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This is a technical comment

Change description of bit 1.2305.8 in table 45-98d to "has low-power ability" (and similarly for the 0 case).

In 45.2.1.134.4 change all "low-power feature" to "low-power ability".

In 45.2.1.133.3 change "low-power mode feature" to "low-power abiilty".

Cl **00** *SC* **0** *P* **59** *L* **50** # 20

Ran, Adee Intel

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

The code is known as "Reed-Solomon" after its two inventors. It appears in many places with a space instead of a hyphen.

SuggestedRemedy

Change "Reed Solomon" to "Reed-Solomon" everywhere in the draft.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **59** *L* **51** # 21

Ran, Adee Intel

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

The draft includes "forty-five" spelled out in several places, apparently to avoid the combination "45 81B". The result is somewhat awkward.

The style manual instructs spelling out numbers less than 10 (Arabic numerals for larger numbers) and also "Numbers applicable to the same category should be treated alike throughout a paragraph; numerals should not be used in some cases and spelled out in others" - but "forty-five" often occurs with other numbers in the same paragraph that are in Arabic numerals.

SuggestedRemedy

Change "forty-five 81B blocks" to "45 instances of 81B blocks", or define these blocks as "B81" and change to "45 B81 blocks", or find another way to avoid spelling out 45. Do this across the draft.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

There are in total 8 instances of in the draft. Change "forty-five 81B blocks" to "45 81B blocks" - there are similar statements in base 802.3 for reference.

Cl **00** *SC* **0** *P* **61** *L* **18** # 24

Ran, Adee Intel

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

"RS-FEC" abbreviation was already defined. No need to repeat the full term after the first time.

SuggestedRemedy

Change in 97.1.2.1 "a Reed Solomon FEC encoder (RS-FEC)" to "an RS-FEC encoder". Go over this clause and fix other cases where the full term appears.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change 2 instances of "a/the Reed Solomon FEC encoder (RS-FEC)" to "the RS-FEC encoder", startign from 97.1.2.1 onwards.

Cl **00** *SC* **0** *P* **61** *L* **19** # 25

Ran, Adee Intel

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

"RS" is an abbreviation of a different term. When referring to RS-FEC please use RS-FEC instead.

SuggestedRemedy

Go over this clause and change "RS" to "RS-FEC" unless it refers to the reconciliation sublayer.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change all instances of "RS encoder" to "RS-FEC encoder" in the draft (7 instances total).
Other compound terms with RS in them remain unchanged.

Cl **00** *SC* **0** *P* **61** *L* **25** # 29

Ran, Adee Intel

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

Should it be "Data Mode" or "data mode"? Both occur in the same paragraph. Same for "training mode".

SuggestedRemedy

Decide and change consistently in the whole clause (and possibly others).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "Data Mode" to "data mode" consistently. There is no need to keep it capitalized.
Add "the" before "data mode" where it is currently missing and where "data mode" is used as a noun.

Cl **00** *SC* **0** *P* **61** *L* **26** # 30

Ran, Adee Intel

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

"Frame" is used in several places in this draft when referring to RS-FEC codeword (e.g. 97.1.2.1 "RS frame"). In 802.3 "frame" is usually used in the context of MAC frames. Previous clauses (such as 91) use the term "codeword". Consistency is preferable.

SuggestedRemedy

Go over this clause and change "frame" to "codeword" whenever it refers to RS-FEC codeword.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change all instances of "frame" (standalone) in Clause 97 to "RS frame" which is a term adopted by the TF.

Cl **00** *SC* **0** *P* **65** *L* **15** # 34

Ran, Adee Intel

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

In 98.4 the term is "Technology-Dependent Interface", but in many places the hyphen is omitted ("Technology Dependent Interface").

SuggestedRemedy

Go over the draft and change "Technology Dependent Interface" to "Technology-Dependent Interface".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The use of hyphen is not consistent in 802.3 base either.
Change all instances of "Technology-Dependent Interface" to "Technology Dependent Interface" (this spelling seems to be more common in 802.3 today).

Cl **1** *SC* **1.4.106a** *P* **24** *L* **17** # 54

Anslow, Pete Ciena

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

Since "T" is after "R" in the alphabet, "BASE-T1" should be after "BASE-R"
Also, 1.4.106a should be after 1.4.28a

SuggestedRemedy

Change the editing instruction to:
"Insert the following new definition after 1.4.107 “BASE-R”:"
change the definition to be 107a
Move 1.4.107a to be after 1.4.28a

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.4.106a** *P* **24** *L* **17** # 77

Remein, Duane Huawei

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

Why are you placeing BASE-T1 before BASE-R? These should be in alphabetic order.
Most editing instructions place new text after exiting text not before it.
Subclauses should be in proper numerical order.

SuggestedRemedy

Change from:
"Insert the following new definition before 1.4.107 “BASE-R”:
1.4.106a BASE-T1: ..."
to:
"Insert the following new definition after 1.4.107 “BASE-R”:
1.4.107a BASE-T1: ..."

Move the Editing instruction and new section after 1.4.28a

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See comment #54

Cl **1** *SC* **1.4.106a** *P* **24** *L* **18** # 53

Anslow, Pete Ciena

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

"Clause 96" should be in forest green, "Clause 97" should be a cross-reference.

SuggestedRemedy

Apply character tag "External" to "Clause 96" and make "Clause 97" a cross-reference.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.5.1.1.4** *P* **25** *L* **52** # 92

Marris, Arthur Cadence Design Syst

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

Spelling of "forth"

SuggestedRemedy

Change "forth" to "fourth"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.5.1.1.4** *P* **26** *L* **1** # 55

Anslow, Pete Ciena

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

IEEE convention for commas in lists is: "In a series of three or more terms, use a comma immediately before the coordinating conjunction (usually and, or, or nor)."

SuggestedRemedy

Change "... Clause 73 or Clause 98 ..." to "... Clause 73, or Clause 98 ..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **31** *L* **7** # 78

Remein, Duane Huawei

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

You appear to be doing more than just changing the reserved space, you appear to be adding some registers.
"Change reserved register space (as modified by IEEE Std 802.3by-201X and IEEE Std 802.3bw-201X) in Table 45-3 as shown below (unchanged rows not shown)"

SuggestedRemedy

Change to:
"Change Table 45-3 (as modified by IEEE Std 802.3by-201X and IEEE Std 802.3bw-201X) as shown below (unchanged rows not shown)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See comment #56

Cl **45** *SC* **45.2.1** *P* **31** *L* **8** # 56

Anslow, Pete Ciena

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

"Change reserved register space" is not sufficiently specific.

SuggestedRemedy

Change "Change reserved register space ..." to "Change the row for 1.2103 through 1.32767 ..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.6.3** *P* **31** *L* **29** # 57

Anslow, Pete Ciena

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

Heading for 45.2.1.6 is missing

SuggestedRemedy

Add heading for 45.2.1.6

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.6.3** *P* **31** *L* **31** # 1

Ran, Adee Intel

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

In this draft the value 111101 is assigned to two separate PMA/PMD types, with distinction between them done by a value in a separate register. This is the first time such duality is introduced in this register, and it is not aligned with the usual semantics, which is the exact type. This would add confusion.

There are existing places to define "speed ability" (table 45-6), "speed selection" (table 45-4) and "extended ability" (table 45-14), why not use them used instead of adding new tables and registers?

With two adjacent reserved bits, 1.7.7:6, available in this register (which can enable almost 200 additional future types) I don't see why this unprecedented use is necessary.

SuggestedRemedy

Remove the change to definition of 111101 and footnote b. Assign the next available value (I assume 111110) to 1000BASE-T1.

Consider removing register 1.2100 bits 3:0 and the text in 45.2.1.131.3, as an "extended register" selection doesn't seem necessary if each PMA/PMD is selected separately.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

P802.3bp TF agreed that BASE-T1 would use 1.2100 to differentiate between PHY types. IEEE Std 802.3bw-2015 created this specific register and 802.3bp is simply extending its meaning to allow for PHY differentiation.

Cl **45** *SC* **45.2.1.6.3** *P* **31** *L* **31** # 58

Anslow, Pete Ciena

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

1.7.5:0 is not a register, it is six bits from a register

SuggestedRemedy

In the editing instruction change "for register 1.7.5:0" to "for bits 1.7.5:0"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.6.3** *P* **31** *L* **35** # 59

Anslow, Pete Ciena

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

The table has the wrong number. It should be Table 45-7 as per the editing instruction.

SuggestedRemedy

Change the table to be Table 45-7

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Make sure the link is live

Cl **45** *SC* **45.2.1.6.3** *P* **31** *L* **35** # 2

Ran, Adee Intel

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

The instruction is to change table 45-7, but the table number is 45-4.

SuggestedRemedy

Change table number to 45-7.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Make sure the link is live

Cl **45** *SC* **45.2.1.6.3** *P* **31** *L* **42** # 60

Anslow, Pete Ciena

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

In Table 45-4 (should be 45-7) footnote b, "If BASE-T1 is selected, register 1.2100.3:0 is used to differentiate which BASE-T1 PMA/PMD was selected."
1.2100.3:0 is not a register, it is four bits from a register and there is a change of tense.

SuggestedRemedy

Change the footnote to: "If BASE-T1 is selected, bits 1.2100.3:0 are used to differentiate which BASE-T1 PMA/PMD is selected."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.14a** *P* **32** *L* **1** # 71

Anslow, Pete Ciena

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

P802.3bw D3.3 has inserted Table 45-17a with title "PMA/PMD extended ability register bit definitions", which is the same as the title of Table 45-14.
However, this table contains the assignment of bits in register 1.18, so should be titled "BASE-T1 PMA/PMD extended ability register bit definitions".

SuggestedRemedy

Show the title of Table 45-17a as being changed to "BASE-T1 PMA/PMD extended ability register bit definitions" by adding "BASE-T1" in underline font.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.131** *P* **31** *L* **52** # 61

Anslow, Pete Ciena

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

In 45.2.1.131, the draft shows "100" as being deleted in multiple places. However, 45.2.1.131 is being inserted by P802.3bw and the latest draft (D3.3) does not have "100" in these places.
In the title of 45.2.1.131.2, a "/" is shown as being replaced by "-", but P802.3bw D3.3 has a "-"

SuggestedRemedy

Remove the "100" in strikethrough font on:
Page 31, lines 52 and 54
Page 32, lines 12, 31, 36, 44
Remove the change of "/" to "-" in the title of 45.2.1.131.2
Fix the editing instructions accordingly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.131.1** *P* **32** *L* **3** # 3

Ran, Adee Intel

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

Having "MASTER-SLAVE manual config enable" as a R/W bit that has value always 1, writes ignored, and the value itself ignored in some condition (defined externally) is extremely confusing. This bit is practically meaningless and useless. Why add so many contradictions and such complexity?

The way bit 14 is defined now (effective if AN is not implemented or not enabled, ignored otherwise) is sufficient to support both 100BASE-T1 and 1000BASE-T1, with or without AN.

SuggestedRemedy

Make bit 15 Read-only, Reserved, value always 0 (or always 1 if it already fixed by 802.3bw). Delete subclause 45.2.1.131.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

1. In Table 45-98a bit 1.2100.15: (1) change Name to “Reserved”, (2) change Description to “Value always 1”, and (3) change R/W to “RO”.
2. Delete subclause 45.2.1.131.1

Cl **45** *SC* **45.2.1.131.2** *P* **32** *L* **38** # 62

Anslow, Pete Ciena

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

The base text (P802.3bw D3.3) has "or SLAVE operation when" but the draft has "or SLAVE operation if" in normal font.
Also, a double ".." at the end of the first inserted sentence (line 40).

SuggestedRemedy

Change "if" to "when".
Remove one of the "."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.131.2** *P* **32** *L* **40** # 126

McClellan, Brett Marvell

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

typo, extra period

SuggestedRemedy

delete extra period

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.131.3** *P* **32** *L* **48** # 63

Anslow, Pete Ciena

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

The sentence "Future modes of operation may use additional settings of these four bits." is not present in the base text (P802.3bw D3.3), but it is shown in normal font.

SuggestedRemedy

Show the added sentence in underline font.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Remove the sentence instead - reserved value can be used for any purpose in the future, and we cannot lock it down anyway.

Cl **45** *SC* **45.2.1.133** *P* **33** *L* **1** # 4

Ran, Adee Intel

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

Two of the functions in this PMA control register (reset and low-power) already exist in register 1.0 (45.2.1.1 in the base document) and are stated here as copies.

The third (Transmit disable) exists in register 1.9 (45.2.1.8, bit 1.9.0 seems appropriate). For this function it is not stated whether 1.9.0 is equivalent to 1.2304.14.

No other PMA/PMD seems to have a special copied register for these functions like this one. Why create this duplicity?

Also it is not clear if writes to one of the "copy" bits should affect the values of both bits (when read) or not.

SuggestedRemedy

Delete 45.2.1.133 and map the functions to registers 1.0 and 1.9 instead. Update PICS and clause 97 as necessary.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The intent here was to consolidate registers in a single block for ease of access while preserving legacy registers and not cause any potential interpretation / implementation issues - hence the copy.

Changes as follows:
Page 33 line 36 - Change the following "1.0.15." to "1.0.15 and setting or clearing either bit affects the other bit."

Page 33 line 42 - insert the following paragraph:
"Bit 1.2304.14 is a copy of 1.9.0 and setting or clearing either bit affects the other bit. Setting either bit shall disable the transmitter."

Page 34 line 1 - Change the following "1.0.11." to "1.0.11 and setting or clearing either bit affects the other bit."

Cl **45** *SC* **45.2.1.133.1** *P* **33** *L* **20** # 83

Remein, Duane Huawei

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

This is a resubmission of unsatisfied comment #75 from Draft 2.0 ballot. Suggested remedy has been changed to account changes made in draft 2.1.

If bit 1.2304.15 is indeed a copy of 1.0.15 then it should display identical functionality.

Furthermore if 1.2304.15 is indeed just a copy of why do you need to repeat all the verbiage from bit 1.0.15?

SuggestedRemedy

Replace this section with "See 45.2.1.1.1."

Add change instruction to 45.2.1.1.1 Reset (1.0.15) as follows:
"Change the last 2 sentences of the first paragraph of 45.2.1.1.1 to read as follows:
During a reset, a PMD/PMA shall respond to reads from register bits 1.0.15, 1.8.15:14, and 1.2304.15. All other register bits should be ignored.
Note: bit 1.2304.15 duplicates the functionality of bit 1.0.15."

Use appropriate mark up text for changed sentence. Original wording (per 802.3bx D3.2) is: "During a reset, a PMD/PMA shall respond to reads from register bits 1.0.15 and 1.8.15:14. All other register bits should be ignored."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #4.

Cl **45** *SC* **45.2.1.134** *P* **34** *L* **42** # 6

Ran, Adee Intel

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

Most of the functions in this 1000BASE-T1 PMA status register are defined in other registers which are common to all other PHYs:

- EEE ability is indicated in register 3.20 (45.2.3.9), which is in the PCS section.
- Receive fault ability is indicated in register 1.8.12 (45.2.1.7.3).
- Low-power ability is indicated in register 1.1.1 (45.2.1.2.5).
- Polarity swap is indicated in register 1.130 (45.2.1.63). The existing indications are separate for each of the four pairs of 10GBASE-T, but it is possible to re-use "Pair A" or use one of the reserved bits for 1000BASE-T1.
- Receive fault is indicated in register 1.8.10 (45.2.1.7.5).
- Receive link status is indicated in 1.1.2 (45.2.1.2.4).

For all of these bits, it is not stated whether they are copies of the existing ones or not (are the existing bits also functional for 1000BASE-T1?)

I do not see why 1000BASE-T1 should have a new register for these functions that is different from all other PHYs, and sometimes in a different section (EEE). Having different bits is an unnecessary complexity for software, and it adds a lot of unnecessary new subclauses.

SuggestedRemedy

Delete the duplicated bits: EEE ability, receive fault ability, receive fault, receive link status. Instead, map these indications to the bits in the existing registers listed.

Consider mapping polarity swap to 1.130.8 (Polarity swap pair A) or assign 1.130.8 (currently reserved) to the single-pair case.

Consider mapping 1000BASE-T1 OAM ability to another register, if it is the only bit left in this register.

Update PICS and clause 97 as necessary.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

These registers apply only to 1000BASE-T1 as described in the table heading.
The 802.3bp Task Force was focused on ease of access and agreed to consolidate 1000BASE-T1 registers bits instead of being scattered across many registers that have nothing to do with 1000BASE-T1. It is believed that this approach will result in simpler implementation, easier access, and no need to implement legacy registers having nothing to do with 1000BASE-T1.

Cl **45** *SC* **45.2.1.134.1** *P* **34** *L* **38** # 5

Ran, Adee Intel

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

"the 1000BASE-T1 PHY supports 1000BASE-T1 OAM" seems redundant. 1000BASE-T1 OAM includes 1000BASE-T1 explicitly.

SuggestedRemedy

Change "the 1000BASE-T1 PHY supports 1000BASE-T1 OAM" to "the PHY supports 1000BASE-T1 OAM". Similarly for the zero case.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
There is nothing wrong with calling out the type of the PHY explicitly.

Cl **45** *SC* **45.2.1.135.2** *P* **36** *L* **3** # 8

Ran, Adee Intel

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

Inconsistent use if "1000BASE-T1 OAM" vs. "OAM". Also, "1000BASE-T1 OAM" explicitly states 1000BASE-T1 so "1000BASE-T1 PHY" is redundant.

SuggestedRemedy

Change the first "OAM" to "1000BASE-T1 OAM".
Change all "1000BASE-T1 PHY" in this clause to "PHY".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the first "OAM" to "1000BASE-T1 OAM".

Cl **45** *SC* **45.2.1.135.3** *P* **36** *L* **8** # 9

Ran, Adee Intel

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

EEE advertisement is contolled by Register 7.60 (45.2.7.13) for all other PHYs. Why use a different one for this PHY?

SuggestedRemedy

Delete 45.2.1.135.3 and map this function to an available reserved bit in 7.60.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

1000BASE-T1 EEE and OAM are advertised during link training in the PMA and not during Auto-Negotiation. See subclause 97.4.2.4.5 for details.

Cl **45** *SC* **45.2.1.136.2** *P* **36** *L* **45** # 10

Ran, Adee Intel

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

"the 1000BASE-T1 PHY" can refer to any of the two PHYs. The counterpart of "link partner" is "local device".

Also applies to 45.2.1.136.3.

SuggestedRemedy

Change "the 1000BASE-T1 PHY" to "the local device".

Change similarly in 45.2.1.136.3.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.50a** *P* **38** *L* **1** # 11

Ran, Adee Intel

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

Both function in this PCS control register (reset and loopback) already exist in register 3.0 (45.2.3.1 in the base document) and are stated here as copies.

No other PCS seems to have a special copied register for these functions like this one. Why create this duplicity?

SuggestedRemedy

Delete 45.2.3.50a and map the functions to register 3.0 instead. Update PICS and clause 97 as necessary.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The intent here was to consolidate registers in a single block for ease of access while preserving legacy registers and not cause any potential interpretation / implementation issues - hence the copy.

Changes as follows:
Page 38 line 33 - Change the following "3.0.15." to "3.0.15 and setting or clearing either bit affects the other bit."

Page 38 line 43 - Change the following "3.0.14." to "3.0.14 and setting or clearing either bit affects the other bit."

Cl **45** *SC* **45.2.3.50a** *P* **38** *L* **1** # 64

Anslow, Pete Ciena

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

The new subclauses for registers 3.2304 through 3.2317 are being inserted at the end of 45.2.3. This means that the subclauses should be numbered as 45.2.3.51 through 45.2.3.57.
Also, there is no editing instruction associated with these subclauses.

SuggestedRemedy

Add an editing instruction and re-number the new subclauses as 45.2.3.51 through 45.2.3.57.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.50a.1** *P* **38** *L* **21** # 85

Remein, Duane Huawei

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

This is a resubmission of unsatisfied comment #77 from Draft 2.0 ballot.

If bit 3.2304.15 is indeed a copy of 3.0.15 then it should display identical functionality.

Furthermore if 1.2304.15 is indeed just a copy of why do you need to repeat all the verbiage from bit 1.0.15?

SuggestedRemedy

Replace this section with "See 45.2.3.1.1."

Add change instruction to 45.2.3.1.1 Reset (3.0.15) as follows:
"Change the last 2 sentences of the first paragraph of 45.2.3.1.1 to read as follows:
During a reset, the 1000BASE-T1 PCS shall respond to reads from register bits 3.0.15, 3.8.15:14, and 3.2304.15. All other register bits should be ignored.
Note: bit 3.2304.15 duplicates the functionality of bit 3.0.15."

Use appropriate mark up text for changed sentence. Original wording (per 802.3bx D3.2) is: "During a reset, a PCS shall respond to reads from register bits 3.0.15 and 3.8.15:14."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #11.

Cl **45** *SC* **45.2.3.50b** *P* **38** *L* **45** # 12

Ran, Adee Intel

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

All function in this PCS status 1 register already exist in register 3.1 (45.2.3.2 in the base document). However they are not stated as copies of the more general PCS status 1 register. It is not clear whether register 3.1 can also be used for 1000BASE-T1.

No other PCS seems to have a special copied register for these functions like this one. Why create this duplicity?

SuggestedRemedy

Delete 45.2.3.50b and map the functions to register 3.1 instead. Update PICS and clause 97 as necessary.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

These are 1000BASE-T1 specific status registers.

Cl **45** *SC* **45.2.3.50b.6** *P* **40** *L* **3** # 84

Remein, Duane Huawei

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

This is a resubmission of unsatisfied comment #77 from Draft 2.0 ballot. The statement in the draft is incorrect, if the bit latches and the link comes up before being read the bit does NOT indicate that the link is down.

Given that bit 3.2305.2 is a latching low bit you cannot say that "When read as a zero, bit 3.2305.2 indicates that the BASE-T1 PCS receive link is down." As it may currently be in the link up state. The instantaneous status, for which this discription would be correct, is bit 3.2306.10.

SuggestedRemedy

Change to read:
"When read as a zero, bit 3.2305.2 indicates that the BASE-T1 PCS receive link was down since the last time this register was read."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.50c** *P* **40** *L* **7** # 13

Ran, Adee Intel

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

Thr functions in the PCS status 2 register can be mapped to existing registers that are used for BASE-R and 10GBASE-T PCS (3.32 and 3.33, 45.2.3.13 and 45.2.3.14 in the base document).

Unless there is a special reason to define a new separate register for the 1000BASE-T1 PCS, it seems preferable to re-use existing registers (which have quite generic defnitions) and avoid adding more clauses and register addresses.

SuggestedRemedy

Delete 45.2.3.50c, and instead bring in 45.2.3.13 and 45.2.3.14 and modify them to apply to 1000BASE-T1 too. Update PICS and clause 97 as necessary.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

These registers apply only to 1000BASE-T1 as described in the table heading.
The 802.3bp Task Force was focused on ease of access and agreed to consolidate 1000BASE-T1 registers bits instead of being scattered across many registers that have nothing to do with 1000BASE-T1. It is believed that this approach will result in simpler implementation, easier access, and no need to implement legacy registers having nothing to do with 1000BASE-T1.

Cl **45** *SC* **45.2.3.50c** *P* **40** *L* **29** # 86

Remein, Duane Huawei

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

Register 2305 appears to be Schizophrenic; it is defined as part of Table 45–163b—1000BASE-T1 status 1 register bit definitions and then again differently in Table 45–163c—1000BASE-T1 PCS status 2 register bit definitions.
This error existed in draft 2.0 but was missed.

SuggestedRemedy

I beleive the entry in Table 163C should be 3.2306.5:0

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "3.2305.5:0" to "3.2306.5:0" in Table 45–163c.
It is not clear what "Schizophrenic" in the comment applies to.

Cl **45** *SC* **45.2.3.50f** *P* **43** *L* **36** # 14

Ran, Adee Intel

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

The bit descriptions in table 45-163f seem to incorrectly inherit some text from the "local" register definitions in table 45-163d.

Bit 15 is an indication of a new message from the LP, cleared after reading - so should be described as "stored and ready to be read".

Bits 1:0 are a message from the link partner so should be described as in the suggested remedy.

SuggestedRemedy

Change "Description" fields as follows:

Bit 15: Change "valid and ready to be loaded" to "stored and ready to be read".

Bits 1:0: Change all occurences of "PHY" to "Link partner". For the value 01, change "Request link partner" to "Link partner requests local device".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.5.3.3** *P* **50** *L* **6** # 72

Remein, Duane Huawei

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

L4 header without L2 and L3

SuggestedRemedy

Add headers for 45.5 and 45.5.3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See comment #65

Cl **45** *SC* **45.5.3.3** *P* **50** *L* **6** # 65

Anslow, Pete Ciena

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

Headings for 56.5 and 45.5.3 missing

SuggestedRemedy

Add headings for 56.5 and 45.5.3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.5.3.3** *P* **50** *L* **8** # 79

Remein, Duane Huawei

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

No MM126 in Standard. It strikes me as odd that you include a Change and an Insert in the same editing instruction.

Change value in “Support” cell for PICS MM126 as shown below. Insert PICS items MM128a through MM128s, as shown below.

SuggestedRemedy

Change the Editing instruction to:
Change Rows in PMA/PMD management functions table as shown below (as modified by P802.3bw). Unchanged rows are not shown.

Show rows for MM128A to MM128s in underlined text.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See also comment #66 and #67.

Cl **45** *SC* **45.5.3.3** *P* **50** *L* **16** # 73

Remein, Duane Huawei

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

For clarity this change to MM126 should be shown as N/A in strike-out and No underlined

SuggestedRemedy

per comment.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Current markup is correct.

Cl **45** *SC* **45.5.3.3** *P* **50** *L* **17** # 66

Anslow, Pete Ciena

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

MM126 shows a change from "o" to "A". However, MM126 is being inserted by P802.3bw and the latest draft (D3.3) does not have "o" here.

SuggestedRemedy

As this is the only change to MM126, remove it from the draft.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.5.3.3** *P* **50** *L* **19** # 67

Anslow, Pete Ciena

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

MM128a through MM128s are being inserted at the end of the table in 45.5.3.3. This means that the new items should be numbered as MM129 through MM147.
Same issue for items RM106a through RM106ae and AM60a through AM60y.
Also, the editing instruction does not say where the items are to be inserted.

SuggestedRemedy

Renumber MM128a through MM128s to MM129 through MM147.
Likewise, renumber items RM106a through RM106ae and AM60a through AM60y to be RM107 and up and AM61 and up.
Insert "at the bottom of the table" in each editing instruction.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **78** *SC* **78.1.3.3.1** *P* **56** *L* **18** # 68

Anslow, Pete Ciena

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

The editing instruction says change the table, but then only part of the table is shown.
The convention used in 802.3 for doing this is to use an "Insert" editing instruction.
Same issue for Tables 78-2 and 78-4

SuggestedRemedy

Change the editing instructions for Tables 78-1, 78-2, and 78-4 to:
"Insert a row for 1000BASE-T1 between 1000BASE-T and XGXS (XAUI) in Table 78–x as follows (unchanged
rows not shown):"
Remove the underline from the inserted rows (no underline associated with and Insert editing instruction).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **78** *SC* **78.1.3.3.1** *P* **56** *L* **47** # 15

Ran, Adee Intel

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

Editing instruction says "Change Table 78-4, adding the following new row between 1000BASE-T and XGXS (XAUI)" but these rows are not adjacent - there is a row between them for 1000BASE-KR.

SuggestedRemedy

Change instruction to read "Change Table 78-4, adding the following new row between 1000BASE-T and 1000BASE-KX".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See comment #68

Cl **97** *SC* **97.1** *P* **59** *L* **21** # 16

Ran, Adee Intel

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

What is the optional ability - EEE or LPI? Usually we have EEE as the ability and LPI as a mode. I suggest using similar text to previous clauses.

SuggestedRemedy

Change
"This clause also specifies 1000BASE-T1 optional Low Power Idle (LPI) as part of Energy-Efficient Ethernet (EEE). This allows the PHY to enter a low power mode of operation"
to
"This clause also specifies an optional Energy-Efficient Ethernet (EEE) capability. A 1000BASE-T1 that supports this capability may enter a Low Power Idle (LPI) mode of operation".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.1** *P* **63** *L* **29** # 141

Brett McClellan Marvell

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

typo, change " SYNCHTROIZATION" to " SYNCHRONIZATION"

SuggestedRemedy

typo, change " SYNCHTROIZATION" to " SYNCHRONIZATION"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.1** *P* **150** *L* **11** # 70

Anslow, Pete Ciena

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

Comment 50 against D2.0 (ACCEPT) changed all instances of "Clause 21" (except in the front matter) to be coloured forest green by
applying the character tag "External" to the text. However, there are 4 instances of "Clause 21" where this has not been done.

SuggestedRemedy

Convert the cross-reference "Clause 21" to text and apply the character tag "External" on:
Page 150, lines 11 and 41
Page 191, lines 10 and 38

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.1.2** *P* **59** *L* **34** # 17

Ran, Adee Intel

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

"using echo cancellation" is an implementation detail. It does not appear in the corresponding "Operation" subclause of 10GBASE-T. It alse makes the sentence more complex than it could be otherwise.

SuggestedRemedy

Delete "(using echo cancellation)".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Comment against unchanged portion of the text.

Cl **97** *SC* **97.1.2** *P* **59** *L* **40** # 18

Ran, Adee Intel

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

"At least" seems to be the objective. I assume the link segment may be shorter than 15 meters. Similarly for "40 meters" in the next list item.

SuggestedRemedy

Change "at least 15 meters" to "up to 15 meters" and "at least 40 meters" to "up to 40 meters".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Comment against unchanged portion of the text.

Cl **97** *SC* **97.1.2** *P* **59** *L* **46** # 19

Ran, Adee Intel

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

Transmission rate is measured in Bauds, not Hertz. Hertz is used in several places instead.

Also, this information is also stated in the last paragraph of this subclause (in GBd as it should be). Perhaps one of these statements can be removed.

SuggestedRemedy

Change "MHz" to "MBd" here, and in other places in this clause (97.2.2.4.2)

Consider removing one of the redundant statements.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "MHz" to "MBd" here, and in other places in this clause (97.2.2.4.2)
No harm in restating the correct value at the end of this subclause.

Cl **97** *SC* **97.1.2** *P* **60** *L* **3** # 69

Anslow, Pete Ciena

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

Figure 97-1 in D2.0 had "ETHERNET LAYERS" at the top of the right hand stack in accordance with comment i-31 against P802.3bx D3.0, which changed to this for all layer diagrams in sections 4, 5, and 6.
In D2.1, this has changed to "LAN CSMA/CD LAYERS".
Same issue for Figure 98-2.

SuggestedRemedy

in Figures 97-1 and 98-2 change "LAN CSMA/CD LAYERS" back to "ETHERNET LAYERS" as it was in D2.0 (but with appropriate font).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.1.2** *P* **60** *L* **25** # 93

Chini, Ahmad Broadcom

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

remove PMD definition, no longer used in figure 97-1.

SuggestedRemedy

as per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.1.2** *P* **61** *L* **3** # 96

Chini, Ahmad Broadcom

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

wrong reference used for MDI spec

SuggestedRemedy

change

97.6.2.2

to

97.6

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.1.2.1** *P* **61** *L* **16** # 22

Ran, Adee Intel

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

"81 bit" should be "81-bit" here. (If it were "value and units" it would be "81 bits")

SuggestedRemedy

Change "81 bit" to "81-bit"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.1.2.1** *P* **61** *L* **17** # 23

Ran, Adee Intel

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

"Error propagation" appears twice in this draft, here and in Table 97–1. This term has a usual meaning in communication (e.g. an effect of a DFE) that doesn't make sense here. It is not clear what it means in this context and when this control code is generated.

SuggestedRemedy

Please clarify and (preferably) use another term if possible, to avoid confusion with the common meaning.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change "error propagation" to
"Transmit error propagation, receive error"

Cl **97** *SC* **97.1.2.1** *P* **61** *L* **19** # 26

Ran, Adee Intel

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

"RS" and "RS-FEC" need not be repeated again and again.

SuggestedRemedy

Change "The RS encoder adds 396 RS-FEC parity bits" to "The RS-FEC encoder adds 396 parity bits".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This is the first usage in this Clause (97) and as such - it is needed.

Cl **97** *SC* **97.1.2.1** *P* **61** *L* **20** # 27

Ran, Adee Intel

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

These 396 bits are parity, not "FEC data".

SuggestedRemedy

Change "396 bits of FEC data" to "396 parity bits".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "396 bits of FEC data" to "396 FEC parity bits".

Cl **97** *SC* **97.1.2.1** *P* **61** *L* **21** # 28

Ran, Adee Intel

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

Sentence is badly phrased, and "ternary PAM3" is redundant.

SuggestedRemedy

Change "Each 3 bits of the scrambled data is converted to 2 ternary PAM3 symbols" to "Each group of 3 bits of the scrambled data is converted to 2 PAM3 symbols".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.1.2.3** *P* **62** *L* **5** # 31

Ran, Adee Intel

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

The sentence in line 5 says "this mode", then the next one says "LPI mode".

SuggestedRemedy

change "this mode" to "LPI mode".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.1.2.3** *P* **62** *L* **8** # 127

McClellan, Brett Marvell

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

typo, extra period

SuggestedRemedy

delete extra period

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.1.2.3** *P* **62** *L* **11** # 32

Ran, Adee Intel

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

It is not clear what "condition on the GMII in the last 80B/81B block of a frame" means - the 80B/81B encoding and the "frame" (probably codeword) are internal to the PCS.

SuggestedRemedy

Change "in the last 80B/81B block of a frame" to "while transmitting the last 80B/81B block of an RS-FEC codeword".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to "condition in the last 80B/81B block of an RS frame"

Cl **97** *SC* **97.1.2.3** *P* **63** *L* **2** # 105
Chini, Ahmad Broadcom

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

Add "(optional)" to the Technology Dependent Interface

SuggestedRemedy

As per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
It is not clear what value a statement like this adds to the figure - Perhaps a statement to 98.4 needs to be added to this effect?

Cl **97** *SC* **97.1.2.3** *P* **63** *L* **28** # 97
Chini, Ahmad Broadcom

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

The arrow from "tx_symb" to LINK SYNCHRONIZATION block should have come from "config".

SuggestedRemedy

as per comment, fix the arrow to come from "config"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Change per Lo_3bp_01_0915.pdf

Cl **97** *SC* **97.1.2.3** *P* **63** *L* **28** # 100
Chini, Ahmad Broadcom

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

The arrow going from LINK SYNCHRONIZATION block to MDI needs to be rerouted.

SuggestedRemedy

Reroute the arrow gpoing from LINK SYNCHRONIZATION block to MDI in figure 97-2 to go to PMA TRANSMIT. Name the arrow "sync_tx_symb".

see also comment #58.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Current figure atches matches Lo_3bp_01_0915.pdf

Cl **97** *SC* **97.1.2.3** *P* **63** *L* **37** # 101
Chini, Ahmad Broadcom

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

missing signal, "loc_phy_ready"

SuggestedRemedy

Draw a new signal line going from PMA RECEIVE to PCS TRANSMIT and PHY CONTROL and LINK MONITOR. Lable the signal as loc_phy_ready.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.1.5** *P* **65** *L* **3** # 33
Ran, Adee Intel

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

"specifically specified" is somewhat redundant.

SuggestedRemedy

Change "unless specifically specified" to "unless specified".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.2** *P* **65** *L* **15** # 35
Ran, Adee Intel

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

Specific cross-reference is preferred. The Technology-Dependent Interface is specified in 98.4.

SuggestedRemedy

Change cross-refierence from "Clause 98" to "98.4" multiple times (line 15, line 20, line 45).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.2** *P* **67** *L* **2** # 128

McClellan, Brett Marvell

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

"(97.4.2.6 or" was supposed to be removed in this draft

SuggestedRemedy

delete "(97.4.2.6 or"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.2.1.1.1** *P* **65** *L* **37** # 36

Ran, Adee Intel

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

DISABLE used to enable?

SuggestedRemedy

Change "enable" to "disable" in the description of DISABLE.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See also comment #102

Cl **97** *SC* **97.2.1.1.1** *P* **65** *L* **37** # 102

Chini, Ahmad Broadcom

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

Editorial correction as per suggested remedy is needed

SuggestedRemedy

Replace

DISABLE Used by the Auto-Negotiation function to enable the PHY
ENABLE Used by the Auto-Negotiation or PHY Link Synchronization process to enable the PHY

with

DISABLE Used by the Auto-Negotiation function to disable the PHY
ENABLE Used by the Auto-Negotiation to enable the PHY

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace

DISABLE Used by the Auto-Negotiation function to enable the PHY

with

DISABLE Used by the Auto-Negotiation function to disable the PHY

Cl **97** *SC* **97.2.1.1.2** *P* **65** *L* **44** # 104

Chini, Ahmad Broadcom

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

link_control is used only in Auto-Negotiation, not link synchronization.

SuggestedRemedy

channge

Auto-Negotiation or PHY Link Synchronization generates this primitive to indicate a change in link_control as described in Clause 98

to

Auto-Negotiation generates this primitive to indicate a change in link_control as described in Clause 98

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.2.2.3.3** *P* **69** *L* **8** # 37

Ran, Adee Intel

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

Echo cancellation is an implementation detail. It is OK to recommend it (for example, as done in 97.4.2.3) but has no place in the service interface definitions.

SuggestedRemedy

Delete "The parameter tx_symb is also used by the PMA Receive function to process the signals received on the MDI for cancelling the echo."

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Comment is against unchanged portion of the text and outside the scope for this recirculation ballot.

Cl **97** *SC* **97.3.1** *P* **73** *L* **24** # 38

Ran, Adee Intel

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

The GMII definition isn't more precise than other definitions. The word "precisely" has been removed from many similar subclauses.

SuggestedRemedy

Delete "precisely".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Comment is against unchanged portion of the text and outside the scope for this recirculation ballot.

Cl **97** *SC* **97.3.2** *P* **74** *L* **9** # 115

McClellan, Brett Marvell

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

typo

SuggestedRemedy

change "receve" to "receive"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.3.2.2** *P* **75** *L* **8** # 46

Gorshe, Steve PMC-Sierra

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

SuggestedRemedy

In the last sentence of the sixth paragraph, add a comma after the word “encoding”

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Comment is against unchanged portion of the text and outside the scope for this recirculation ballot.

Cl **97** *SC* **97.3.2.2.4** *P* **76** *L* **3** # 117

McClellan, Brett Marvell

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

formatting

SuggestedRemedy

change superscript characters to non-superscript

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.3.2.2.4** *P* **76** *L* **24** # 116

McClellan, Brett Marvell

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

typo

SuggestedRemedy

change "Salomon" to "Solomon"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.3.2.2.4** *P* **76** *L* **24** # 39

Ran, Adee Intel

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

In Figure 97–5 "Reed Salomon" is a typo. The abbreviation "RS-FEC" can and should be used here. Similarly in Figure 97–6.

SuggestedRemedy

Change "Reed Salomon FEC" to "RS-FEC" in both figures.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment #116 for all changes to be introduced.

Cl **97** *SC* **97.3.2.2.4** *P* **77** *L* **10** # 118

McClellan, Brett Marvell

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

formatting

SuggestedRemedy

change superscript characters to non-superscript

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.3.2.2.4** *P* **77** *L* **31** # 119

McClellan, Brett Marvell

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

typo

SuggestedRemedy

change "Salomon" to "Solomon"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.3.2.2.4** *P* **78** *L* **9** # 120

McClellan, Brett Marvell

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

errors added when figure was changed

SuggestedRemedy

change 3545 to 3645
line 13 change "04096" to "0:4049"
line 18 change 3545 to 3645

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.3.2.2.5** *P* **78** *L* **3** # 40

Ran, Adee Intel

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

"o/p" is uncommon, not sure it is defined in this standard. I assume it means "output". There is room for the whole word.

SuggestedRemedy

Change "o/p" tp "output" throughout this figure and elsewhere.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "o/p" tp "output" in Figure 97-7

Cl **97** *SC* **97.3.2.2.5** *P* **78** *L* **9** # 103

Chini, Ahmad Broadcom

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

Three numbers need correction in figure 97-7.

SuggestedRemedy

In figure 97-7,line 9 under OAM block the number range 3545:3653 should be changed to 3645:3653.

In figure 97-7,line 18 under Binary block the number range 3565:3653 should be changed to 3645:3653.

In figure 97-7,line 13 , change 04096 to 0:4049

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See also comment #120.

Cl **97** *SC* **97.3.2.2.5** *P* **79** *L* **3** # 41

Ran, Adee Intel

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

Equations should be numbered and well-defined. The text in monospace font does not consist of equations, nor of code in any programming language. It is a poorly written substitute of the clear definitions that are required for an important process like this.

SuggestedRemedy

Replace the text in lines 3 through 19 with either a set of numbered equations that clearly define the encoding, or alternatively a valid code in some programming language that represents the process.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Comment is against unchanged portion of the text and outside the scope for this recirculation ballot.

Cl **97** *SC* **97.3.2.2.6** *P* **79** *L* **26** # 42

Ran, Adee Intel

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

"Will convey" is not standard language. Assuming this is a normative behavior, use either "shall convey" or "conveys".

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Comment is against unchanged portion of the text and outside the scope for this recirculation ballot.

Cl **97** *SC* **97.3.2.2.11** *P* **80** *L* **30** # 43

Ran, Adee Intel

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

Subclause 97.3.2.2.11 is titled "transmit process" while its parent 97.3.2.2 is titled "PCS transmit function". It seems to only repeat/summarize information that was already provided in previous subclauses. Perhaps it should be deleted?

SuggestedRemedy

If this subclause contains useful information, then rename it and delete the repetition of other contents. Otherwise, please delete it.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Comment is against unchanged portion of the text and outside the scope for this recirculation ballot.

Cl **97** *SC* **97.3.2.2.12** *P* **80** *L* **45** # 47

Gorshe, Steve PMC-Sierra

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

SuggestedRemedy

I recommend the following change to the first sentence of the first paragraph. Change it from "…encode the transmitted data stream using Reed-Solomon code (450,406). " to "…encode the transmitted data stream using a Reed-Solomon code " The details of the RS code are provided in the next paragraph, so it's redundant to have them here also.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Comment is against unchanged portion of the text and outside the scope for this recirculation ballot.

Cl **97** *SC* **97.3.2.2.12** *P* **81** *L* **42** # 44

Ran, Adee Intel

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

"The code has a correction capability of up to twenty-two symbols" seems out of place here. Also "22" should be used, as this number is larger than nine.

SuggestedRemedy

Change "twenty-two" to "22". Also consider moving this sentence to the second paragraph of this subclause, after "44 parity symbols".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Comment is against unchanged portion of the text and outside the scope for this recirculation ballot.

Cl **97** *SC* **97.3.6.1** *P* **88** *L* **44** # 121

McClellan, Brett Marvell

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

constants is duplicated

SuggestedRemedy

delete "constants,"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.3.6.2.2** *P* **90** *L* **20** # 122

McClellan, Brett Marvell

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

formatting issues

SuggestedRemedy

change superscript to non-superscript
line 22 fix spacing on this line
line 51 fix spacing on this line

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.3.6.4** *P* **93** *L* **41** # 123

McClellan, Brett Marvell

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

transitions with different conditions cannot be combined into the same transition line.

SuggestedRemedy

transition from INC_CNT2 to HI_RFER should be labeled UCT
Separate UCT from rfrx_cnt = RFRX_CNT_LIMIT
label transition from INC_CNT2 to HI_RFER with UCT

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.3.8.1** *P* **96** *L* **22** # 124

McClellan, Brett Marvell

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

Start sentence with "Twelve" instead of "12"

SuggestedRemedy

Change "12" to "Twelve"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.3.8.3** *P* **103** *L* **12** # 76

Remein, Duane Huawei

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

Resubmission of unsatisfied comment #74 from Draft 2.0 ballot.
The content of Table 97-15 [now Table 97-6] is very similar to various tables in Section 6 such as Tables 82–10, 82–11, 84-2, ,84-3, 85-2, 85-3, 86-3, 86-4, 84-2, 84-3, 87-2, 87-3, 88-2, 88-3, 89-2, 89-3, 95-2, and 95-3. The structure and style should match as well to help maintain consistency in the standard.

Given that you split this one convienenet table into several scattered pieces in D2.1 this comment now also applies to Tables 97–9, 97–10, and 97-11.

SuggestedRemedy

Change table format (header & columns) to align with the tables listed in the comment.
Change headings for Table 97-6 to:
"MDIO control variable | PCS register name | Register/ bit number | PCS control variable"
Add missing register names to table.
Similar changes in other tables.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
See response to comment #74 on D2.0.

Cl **97** *SC* **97.4.1** *P* **111** *L* **30** # 106

Chini, Ahmad Broadcom

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

The arrow going from LINK SYNCHRONIZATION block to MDI needs to be corrected.

SuggestedRemedy

Replace the arrow from LINK SYNCHRONIZATION block to MDI in figure 97-19 with an arrow going from LINK SYNCHRONIZATION to PMA TRANSMIT. Name the arrow "sync_tx_symb".

see also comment #58 and #59.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Current implementation matches Lo_3bp_01_0915.pdf and there is no technical justification provided in the comment.

Cl **97** *SC* **97.4.2.2** *P* **112** *L* **20** # 107

Chini, Ahmad Broadcom

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

definition of a new symbol "sync_tx_symb" is required.

SuggestedRemedy

change

given by tx_symb when sync_link_control = false, or the symbols output by the PHY Link Synchronisation

to

given by tx_symb when sync_link_control = false, or the sync_tx_symb output by the PHY Link Synchronisation

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.4.2.2** *P* **112** *L* **29** # 108

Chini, Ahmad Broadcom

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

loop timing is not needed for link synchronization.

SuggestedRemedy

Add the following to the end of paragraph.

Loop timing is not required during link synchronization.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Comment is against unchanged portion of the text and outside the scope for this recirculation ballot.

Cl **97** *SC* **97.4.2.4.8** *P* **116** *L* **2** # 45

Gorshe, Steve PMC-Sierra

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

For clarity:

SuggestedRemedy

Add the following sentence to the end of the paragraph: "While the switch is set to CRC out, the 16 delay elements S0,…, S15 are re-initialized to zero for the next CRC calculation."

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Comment is against unchanged portion of the text and outside the scope for this recirculation ballot.

Cl **97** *SC* **97.4.2.4.11** *P* **118** *L* **14** # 80

Remein, Duane Huawei

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

No varible "force_config" defined, perhaps you're referring to "config" in 97.4.2.6.1?

SuggestedRemedy

Change "force_config" to "config"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Comment is against unchanged portion of the text and outside the scope for this recirculation ballot.

Page 120 line 7 change config to force_config
Page 122 change all instances of config to force_config in Figure 97-25

Cl **97** *SC* **97.4.2.5** *P* **118** *L* **46** # 109

Chini, Ahmad Broadcom

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

Not a necessary text, better removed for easier read.

SuggestedRemedy

Remove the following sentence

"If the presence of a remote device is sensed through reception of DME data, the Auto-Negotiation process exchanges Auto-Negotiation information with the remote device."

Proposed Response *Response Status* **W**

PROPOSED REJECT.
It is not clear how its removal serves for "easier read".

Cl **97** *SC* **97.4.2.6** *P* **123** *L* **1** # 99

Chini, Ahmad Broadcom

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

Need to define a new variable connecting LINK SYNCHRONIZATION and PMA TRANSMIT in figure 97-2 (see also comment #59)

SuggestedRemedy

Add the following new subcluse

97.4.2.6.4 Messages

sync_tx_symb

A signal sent from Link Synchronization block to PMA Transmit indicating that a PAM2 (SEND_S) or zero (SEND_Z) symbol is available. The Link Synchronization block generates sync_tx_symb synchronously with every transmit clock cycle.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.4.2.6.1** *P* **120** *L* **37** # 110

Chini, Ahmad Broadcom

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

Signal name from link synchronization is missing

SuggestedRemedy

modify

DISABLE: The data source is the PHY Link Synchronization function

to

DISABLE: The data source is the PHY Link Synchronization function (sync_tx_symb)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.5.2** *P* **129** *L* **41** # 94

Chini, Ahmad Broadcom

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

Incorrect clock speed for test mode 4

SuggestedRemedy

change

(1/750 MHz)

to

(2/750 MHz)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.5.3** *P* **135** *L* **26** # 114

Chini, Ahmad Broadcom

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

Missing subclause 97.5.3.4

Also error in PSD MASK equations on lines 26 and 31.

SuggestedRemedy

Insert the following paragraph at page 135 line 23

97.5.3.4 Transmitter Power Spectral Density (PSD) and power level

In test mode 5 (normal operation with no power back-off), the transmit power shall be less than 5 dBm and the power spectral density of the transmitter, measured into a 100 (ohm sign, capital omega) load using the test fixture 5 shown in Figure 97-33 shall be between the upper and lower masks specified in Equations (97-14) and (97-15). The masks are shown graphically in Figure 97-34. The measurements need to be calibrated for insertion loss of the differential Balun used in the test. Resolution bandwidth of 100KHz and sweep time of larger than 1 second are considered in PSD measurement.

Also Fix the formulas as per chini_3bp_01_0115.pdf, page 9

update PICS accordingly

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Insert the following paragraph at page 135 line 23

97.5.3.4 Transmitter Power Spectral Density (PSD) and power level

In test mode 5, the transmit power shall be less than 5 dBm and the power spectral density of the transmitter, measured into a 100 (ohm sign, capital omega) load using the test fixture 5 shown in Figure 97-33 shall be between the upper and lower masks specified in Equations (97-14) and (97-15). The masks are shown in Figure 97-34.

Also Fix the formulas as per chini_3bp_01_0115.pdf, page 9

update PICS accordingly

Cl **97** *SC* **97.5.3.2** *P* **133** *L* **36** # 98

Chini, Ahmad Broadcom

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

Need to increase transmit distortion level from 10mV to 20 mV peak to allow for PoDL.

SuggestedRemedy

change

shall be less than 10mV.

to

shall be less than 20 mV.

update PICS accordingly.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Comment is against unchanged portion of the text and outside the scope for this recirculation ballot.

Cl **97** *SC* **97.5.3.2** *P* **133** *L* **53** # 95

Chini, Ahmad Broadcom

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

bit order in Matlab script does not match test mode 4 definition.

SuggestedRemedy

change

data = 4*scr3(:,3)+ 2*scr3(:,2)+scr3(:,1);

to

data = 4*scr3(:,1)+ 2*scr3(:,2)+scr3(:,3);

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.5.5.2** *P* **136** *L* **31** # 111

Chini, Ahmad Broadcom

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

Alien cross talk test numbers do not correspond to the defined limit lines in 97.5.6.3.2 and 97.5.6.3.4.

SuggestedRemedy

change

magnitude of –130 dBm/Hz for devices supporting type A link segments and –145 dBm/Hz for devices supporting type B link segments.

to

magnitude of –100 dBm/Hz for devices supporting type A link segments and –110 dBm/Hz for devices supporting type B link segments.

update PIC accordingly

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Material for discussion at the meeting:
http://grouper.ieee.org/groups/802/3/bp/public/nov15/chini_3bp_01_1115.pdf

Cl **97** *SC* **97.5.6.1.4** *P* **139** *L* **29** # 113

Chini, Ahmad Broadcom

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

There was a request in previous IEEE cycle to consider multiple classes of balance requirements.

SuggestedRemedy

change

"Each type A link segment shall meet"

to

".Three classes of requirements E1, E2 and E3 are considered. For class E3, each type A link segment shall meet"

In the next page line 39 insert the following,

Class E1 shall meet mode conversion loss that is relaxed by 20dB as compared to class E3. Class E2 shall meet mode conversion loss that is relaxed by 10dB as compared to class E3.

update PICS accordingly

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Comment is against unchanged portion of the text and outside the scope for this recirculation ballot.

Cl **97** *SC* **97.6.2** *P* **148** *L* **4** # 112

Chini, Ahmad Broadcom

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

MDI mode conversion limit needs to be added

SuggestedRemedy

add the following

97.6.2.3 MDI mode conversion loss
Mode conversion LCL (Sdc11) of the PHY measured at MDI shall exceed by 5dB the limit defined in 97.5.6.1.4 for all frequencies from 10 MHz to 600 MHz. Alternatively, TCL (Scd11) may be measured to pass this requirement.

Also, add the PICS

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The requirements of 97.5.6.1.4 are very difficult to achieve as they are today. Imposing a 5 dB improvement for the MDI should be supported by measurements demonstrating feasibility.

Cl **97** *SC* **97.10.4** *P* **152** *L* **5** # 81

Remein, Duane Huawei

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

Subclause, Status & Support col are blank for G1

SuggestedRemedy

Complete the row by filling in the blank cells.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.10.8** *P* **157** *L* **38** # 74

Remein, Duane Huawei

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

Stray "]" in row PMF32

SuggestedRemedy

strike

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97** *SC* **97.10.9** *P* **158** *L* **5** # 89

Remein, Duane Huawei

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

PME1 cannot be guaranteed by a PHY manufacturer. How is a device mfg supposed to ensure it complies "with applicable local ... codes? Check every local authority in the world? This is a system level requirement not a device level requirement (but 802.3 is a device level specification).

SuggestedRemedy

Remove requirement.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Remove PME1 and update PICS for Clause 97. PME1 does not have associated text in 97.5.1

Cl **97** *SC* **97.10.10.1** *P* **161** *L* **1** # 90

Remein, Duane Huawei

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

Most if not all of the requirements in this section do not belong in a PHY specification. They deal with the characteristics of the network the PHY is connected to. In fiber specification we don't specify the characteristics of the fiber (yes we do reference them but that is different). For example we don't specify the min. bend radius in the network a PHY is connected to.
If you feel a strong need to include this information it should be segregated to an appendix.

SuggestedRemedy

Remove these requirements (and their referenced text) or place in an appendix.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
In this case, given that the channel needs to be described in a normative manner (there is no external reference in existence), these are actual performance requirements.

Both 1000BASE-T and 10GBASE-T specified the link segment characteristics because there was not an established cabling reference at the time they were published.

Cl **97** *SC* **97.10.13** *P* **163** *L* **7** # 88

Remein, Duane Huawei

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

ES2 is an application level requirement and cannot be mandated for a PHY. If someone chooses to use a 1000BASE-T1 PHY in something other than a motor vehicle does the PHY become non-compliant? How about in a Corvette where you want to run a link segment close to the fiberglass body; is that also a non-compliant PHY?

SuggestedRemedy

Strike the requirement.
On Pg 148 line 38 remove the "shall"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.2** *P* **166** *L* **8** # 125

McClellan, Brett Marvell

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

typos

SuggestedRemedy

change "pecific" to "Specific"
change "MA" to "PMA"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** *SC* **98.2.3** *P* **174** *L* **15** # 51

Booth, Brad Microsoft

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

This is a follow-up to comment #65 against D2.0.

The response read:
The term "half-duplex" is associated with the general concept of telecommunication links operating in a specific manner, and not tied to MAC only. The use of this term is correct in the current draft and as intended by TF.

Half duplex in 802.3 is defined as:
1.4.216 half duplex: A mode of operation of a CSMA/CD local area network (LAN) in which DTEs contend for access to a shared medium. Multiple, simultaneous transmissions in a half duplex mode CSMA/CD LAN result in interference, requiring resolution by the CSMA/CD access control protocol.

Is not the CSMA/CD access control protocol the same as the MAC?

SuggestedRemedy

Define a term that cannot be confused with the existing 802.3 definition.

Add to 1.4.xxx the definition, "AN half-duplex function: the ability to exchange auto-negotiation DME pages over a single differential-pair medium. (See IEEE Std. 802.3, Clause 98.)"

Replace uses of "half duplex function" and "half-duplex function" with "AN half-duplex function".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97.4.** *SC* **97.4.2.4.11** *P* **118** *L* **15** # 82

Remein, Duane Huawei

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

No varible "force_PHY_type" defined, perhaps you're referring to some other variable?

SuggestedRemedy

Remove the lone variable force_PHY_type or replace it with a properly defined variable.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Page 120 line 13 - add new variable

force_1000T1
This variable indicates whether the PHY is forced to operate in 1000BASE-T1.
true: if Auto-Negotiation is disabled or not implemented and force_PHY_type indicates 1000BASE-T1
false: if Auto-Negotiation is enabled or force_PHY_type does not indicate 1000BASE-T1

Page 122 Figure 97-25 in the SYNC_DISABLE state - make the in condition:
power_on = true +
mr_main_reset = true +
mr_autoneg_enable = true +
force_1000T1 = false

Cl **97.5.** *SC* **97.5.2.1** *P* **131** *L* **31** # 130

Moffitt, Bryan CommScope

Comment Type **E** *Comment Status* **D** *post-deadline*

Figure 97–29 "B" not identified or used

SuggestedRemedy

delete or explain

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Delete the "B" and the arrow in figure 97-29

Cl **97.5.** *SC* **97.5.2.1** *P* **132** *L* # 139

Moffitt, Bryan CommScope

Comment Type **T** *Comment Status* **D** *OOS; post-deadline*

fig 97-32 (and 97-33)
Balun may be inadequately specified

SuggestedRemedy

typical balun balance should be greater than 40 dB and CM impedance = 75 Ohm?

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Comment is against unchanged portion of the text and outside the scope for this recirculation ballot.

Cl **97.5.** *SC* **97.5.2.1** *P* **136** *L* **5** # 129

Moffitt, Bryan CommScope

Comment Type **E** *Comment Status* **D** *post-deadline; OOS*

discusses Vd which is not in the figure under discussion.

SuggestedRemedy

It appears to belong to figure 97-30, and this test description should be moved to where the rest of the test is described at p 133 line 37

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Comment is against unchanged portion of the text and outside the scope for this recirculation ballot.

Cl **97.5.** *SC* **97.5.3.3** *P* **135** *L* **25** # 131

Moffitt, Bryan CommScope

Comment Type **E** *Comment Status* **D** *post-deadline; OOS*

PSD test limits are provided but it is missing an introduction or description of the test such as is provided for the other tests.

SuggestedRemedy

Simple introduction sentence:
In addition the transmit PSD is measured using test mode XXX and
test fixture 5 as shown in Figure 97–33.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Comment is against unchanged portion of the text and outside the scope for this recirculation ballot.

Cl **97.5.** SC **97.5.4.1** P **136** L **5** # 132
Moffitt, Bryan CommScope

Comment Type **E** *Comment Status* **D** *post-deadline; OOS*

should this reference Figure 97–29?

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Comment is against unchanged portion of the text and outside the scope for this recirculation ballot.

Cl **97.5.** SC **97.5.5.1** P **136** L **24** # 133
Moffitt, Bryan CommScope

Comment Type **E** *Comment Status* **D** *post-deadline*

runon sentence

SuggestedRemedy

change to:
than 10-7 for 125-octet frames. If optional support of operation

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97.5.** SC **97.5.5.2** P **136** L **49** # 134
Moffitt, Bryan CommScope

Comment Type **E** *Comment Status* **D** *post-deadline*

Was 100BASET1 intended?

SuggestedRemedy

Maybe 1000BASET1?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97.6.** SC **97.6.2.1** P **147** L **51** # 135
Moffitt, Bryan CommScope

Comment Type **E** *Comment Status* **D** *post-deadline*

Figure 97–43 should reference the RL equation

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97B.2** SC **97B.2** P **203** L **45** # 136
Moffitt, Bryan CommScope

Comment Type **E** *Comment Status* **D** *post-deadline*

change "length with one of the link segments extending unbundled for 3 m" to length with the center link segment extending unbundled for 3 m" to be consistent with p 204 line 46

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **97B.2** SC **97B.2** P **203** L **48** # 137
Moffitt, Bryan CommScope

Comment Type **E** *Comment Status* **D** *post-deadline; OOS*

clarity:
only the 4 port method is followed, and tests must be done for each of the links

SuggestedRemedy

change "The alien crosstalk measurements are to be performed utilizing the test setup and methodology specified in Annex 97A" to "The alien crosstalk measurements are to be performed utilizing the test setup and methodology specified in Annex 97A using a four-port test setup. All link segments must meet the requirements"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Comment is against unchanged portion of the text and outside the scope for this recirculation ballot.

Cl **97B.3** *SC* **97B.3** *P* **204** *L* **33** # 140

Moffitt, Bryan CommScope

Comment Type **T** *Comment Status* **D** *post-deadline*

30 cm is too far to maintain bundling

SuggestedRemedy

change maximum fixation length to 15 cm, especially given the need to meander.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The current maximum value of 30cm does not preclude performing measurements at 15cm

Cl **97B.3** *SC* **97B.3** *P* **205** *L* **10** # 138

Moffitt, Bryan CommScope

Comment Type **E** *Comment Status* **D** *post-deadline*

Figure 97B–2 (and Figure 97B–3) generically titled

SuggestedRemedy

figures should be titled "Use Case 1 test configuration" and "Use Case 2 test configuration" to be consistent with the text.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.