Cl **0** *SC* **0** *P* *L* # i-138

Schicketanz, Dieter — Reutlingen Universty

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

in bz in the alin clause there is a sentence that the calculation is done up tp 100 and 200 MHz due to niuse issues

SuggestedRemedy

It is done differently in bq, for the sake of Multigigabit both standards should be harmonized

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

The commentor doe not provide enough detail or page/line references to understand the issues raised nor recommend specific changes to the draft to implement any changes.

Cl **0** *SC* **0** *P* *L* # i-89

RAN, ADEE — Intel Corporation

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

The style manual says
"...the use of the word must is deprecated and shall not be used when stating mandatory requirements; must is used only to describe unavoidable situations"
and
"The word may is used to indicate a course of action permissible within the limits of the standard (may
equals is permitted to)"
And also deprecates usage of the word "will" and says "will is only used in statements of fact".

The word "must" appears in the draft in P114 L2, P122 L24, and P148 L14. In all cases it does not describe an unavoidable situation, and seems to be a mandatory requirement.

The word "will" also appears in some places not as a statement of fact.

The word "may" is found in numerous places but sometimes has a meaning inconsistent with "is permitted to". In (P92 L18, P126 L25) it seems to be a normative statement (listing only several allowed values, others values are not). In (P130 L8 and L9, P149 L35) it is part of "may not" which is inconsistent (optional vs. prohibitive) and confusing - this is the reason for this comment being TR. In (P171 L17, P176 L14, P195 L19, L26 and L27, P197 L10) it points to a capability or to natural phenomena.

A significant effort was done in 802.3bx to clean the standard with respect to these words. It would be helpful for the next revision if this amendment adheres with the manual.

SuggestedRemedy

Across the draft, change "must" and "will" to "shall" or rephrase as necessary.

Check usage of the word "may" in the listed locations and replace to "can", "shall", "shall not", or rephrase as necessary.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
P114 L2 see comment i-73 to remove "must"
(Editor's note added after comment resolution: Resolution to comment i-73: Change "(Note that two random fill bits must be transmitted instead ..." to read "(It is highly recommended that two random fill bits be transmitted instead…")
P122 L24 describes a desired state, not a requirement, what follows states the requirements to achieve this. Delete "must" on P122 L24

P148 L14 change "must set" to "sets"

P92 L24, P110 L1, L4, and L13, P124 L4 change "will be" to "is"

P127 L18 delete "will" to read "When the timer reaches its terminal count, lfer_timer_done

= TRUE".

P139 L3 delete "will"

P150 L36 and L37 change "will" to "shall" to read: "If the link partner requested THP bypass for fast retrain the PHY shall bypass the THP (or set THP coefficients to zero). Otherwise the PHY shall keep its THP turned on with its previously exchanged coefficients, and send PAM2 signaling within a time period equivalent to 9 LDPC frame periods." and update PICS.

P178 L6 change "will be used to refer" to "used in this clause refers"

P92 L18 replace "may take on" with "takes on"
P92 L19 replace "may additionally take on" with "additionally takes on"

P130 L8, L9 - change "may not" to "are not guaranteed to be" (L8) and "are not guaranteed to" (L9)

P149 L35 change "may not be" to "are not" to read: "The THP coefficients and PBO setting are not changed during PMA_Fine_Adjust."

P171 L17, P176 L14, P195 L27 change "may" to "can"
P195 L19 and P197 L10 change "may be" to "are"
P195 L26 delete "may"

Cl **0** *SC* **0** *P* **0** *L* **0** # i-158

Turner, Michelle

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

This draft meets all editorial requirements.

SuggestedRemedy

Response *Response Status* **C**

ACCEPT.
(Editor's note - added after comment resolution - no change to the draft required)

Cl **0** *SC* **0** *P* **49** *L* **3** # i-103

Zimmerman, George Aquantia, and CommS

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

Table 45-119, entry for register 3.21, EEE control and capability 2 is missing

SuggestedRemedy

add entry for register 3.21 to Table 45-119

Response *Response Status* **C**

ACCEPT.

Cl **1** *SC* **1.2** *P* **24** *L* **40** #

Rolfe, Benjamin Blind Creek Associate

Comment Type **T** *Comment Status* **R** *LATE - Definitions*

(LATE) "In addition to the requirements outlined in ISO/IEC 11801-1 and ANSI/TIA-568-C.2-1, IEEE Std 802.3, Clause 14, Clause 23, Clause 25, Clause 40, Clause 55, and Clause 113 specify additional requirements for this cabling when used with 10BASE-T, 100BASE-T, 10GBASE-T, 25GBASE-T, and 40GBASE-T." is not part of the definition of the term, but rather specifies characteristics of the thing being referred to by the term and so belongs in a normative clause. "Each definition should be a brief, self-contained description of the term in question and shall
not contain any other information, such as requirements or elaborative text." (the use of "in addition" and "requirements" are clues either this is elaborative or stating requirements")

SuggestedRemedy

Delete text following first sentence.

Response *Response Status* **C**

REJECT.
Text is consistent with other definitions for category cabling in IEEE 802.3-2016, and there are several.

Cl **1** *SC* **1.4** *P* **24** *L* **21** # i-17

RAN, ADEE — Intel Corporation

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

"25GBASE-R as inserted by IEEE Std 802.3by-201X" is in 1.4.64g. Looking at the project listed as running in parallel (IEEE P802.3bn, IEEE P802.3bs, IEEE P802.3bw, IEEE P802.3by, and IEEE P802.3bz) I could not find any one that inserted later subclauses h and i.

SuggestedRemedy

Change subclause identifier to 1.4.64h and update editing instruction accordingly.

Response *Response Status* **C**

ACCEPT. (implemented by i-161)

[Editor's note added after comment resolution was completed:
The resolution to comment i-161 was
[1] The text '... into the list after 1.4.64i 25GBASE-R as inserted ...' be changed to read '... into the list after 1.4.64g 25GBASE-SR as inserted ...' assuming IEEE P802.3by comment i-89
<http://ieee802.org/3/by/public/comments/8023by_D30_comment_received_by_clause.pdf#Page=3> is accepted or '... into the list after 1.4.64g 25GBASE-R as inserted ...' if not.
[2] The text '1.4.64j 25GBASE-T: ...' be changed to read '1.4.64h 25GBASE-T: ...'.
]

Cl **1** *SC* **1.4** *P* **24** *L* **21** # i-162

Law, David — Hewlett Packard Enter

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

We normally place reference to something having been modified by another amendment in parenthesis, we usually end the editing instructions with the text ' as follows:'.

SuggestedRemedy

Suggest the text '... as inserted by IEEE Std 802.3by-201X' be changed to read '... (as inserted by IEEE Std 802.3by-201X) as follows:'.

Response *Response Status* **C**

ACCEPT.

Cl **1** *SC* **1.4** *P* **24** *L* **21** # i-161

Law, David — Hewlett Packard Enter

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

The entries that are being added by IEEE P802.3by draft D3.0 are 1.4.64a through 1.4.64g therefore, assuming that IEEE P802.3by will be approved before IEEE P802.3bq, 25GBASE-T should be 1.4.64h.

SuggestedRemedy

Suggest that:

[1] The text '... into the list after 1.4.64i 25GBASE-R as inserted ...' be changed to read '... into the list after 1.4.64g 25GBASE-SR as inserted ...' assuming IEEE P802.3by comment i-89
<http://ieee802.org/3/by/public/comments/8023by_D30_comment_received_by_clause.pdf#Page=3> is accepted or '... into the list after 1.4.64g 25GBASE-R as inserted ...' if not.
[2] The text '1.4.64j 25GBASE-T: ...' be changed to read '1.4.64h 25GBASE-T: ...'.

Response *Response Status* **C**

ACCEPT.

Cl **1** *SC* **1.4** *P* **24** *L* **25** # i-121

Donahue, Curtis

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

Change "25Gb/s" to "25 Gb/s".

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT.
Implemented by i-16

[Editor's note added after comment resolution was complete:
the resolution to comment i-16 was:
Change "25Gb/s" to "25 Gb/s".
]

Cl **1** *SC* **1.4** *P* **25** *L* **1** # i-163

Law, David — Hewlett Packard Enter

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

As it now seems likely that IEEE P802.3bq will be approved before IEEE P802.3bn this addition should be updated.

SuggestedRemedy

[1] The text '... after 1.4.277 mixing segment (and after 1.4.277a inserted by IEEE Std 802.3bn-201x) as ...' be changed to read '... after 1.4.277 mixing segment as ...'.
[2] The text ' 1.4.277b MultiGBASE-T: ...' be changed to read ' 1.4.277a MultiGBASE-T: ...'.
[3] The editors box and text on line 8 be deleted.

Response *Response Status* **C**

ACCEPT.

Cl **1** *SC* **1.4** *P* **25** *L* **4** # i-164

Law, David — Hewlett Packard Enter

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

Isn't a 'BASE-T Ethernet PCS/PMA' just a 'BASE-T PHY'?

SuggestedRemedy

Suggest that '... of specific BASE-T Ethernet PCS/PMAs at ...' be changed to read '... of specific BASE-T PHYs at ...'.

Response *Response Status* **C**

ACCEPT.

Cl **1** *SC* **1.4.131a** *P* **24** *L* **41** # i-18

RAN, ADEE — Intel Corporation

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

Superfluous comma between "IEEE Std 802.3" and "Clause 14".

SuggestedRemedy

Remove the comma.

Response *Response Status* **C**

ACCEPT.

Cl **1** *SC* **1.4.277b** *P* **25** *L* **6** # i-19

RAN, ADEE — Intel Corporation

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

"(for both 25GBASE-T and 40GBASE-T)" can be read as if it refers to both Clause 55 and Clause 113.

There is no need for the nested parenthesis, the reference is informative enough without it. Other clauses that define sublayers used in multiple rates (such as Clause 82) are referenced without listing all relevant types.

SuggestedRemedy

Delete "(for both 25GBASE-T and 40GBASE-T)".

Response *Response Status* **C**

ACCEPT.

Cl **1** *SC* **1.4.64j** *P* **24** *L* **25** # i-16

RAN, ADEE — Intel Corporation

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

Missing space.

SuggestedRemedy

Change "25Gb/s" to "25 Gb/s".

Response *Response Status* **C**

ACCEPT.

Cl **105** *SC* **105.1.3** *P* **76** *L* **11** # i-37

RAN, ADEE — Intel Corporation

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

25GBASE-T is not only about transmitting.

SuggestedRemedy

Change "for transmitting 25 Gb/s Ethernet over" to "for data communication at 25 Gb/s over".

Response *Response Status* **C**

ACCEPT.

Cl **105** *SC* **105.1.3** *P* **76** *L* **8** # i-174

Law, David — Hewlett Packard Enter

Comment Type **E** *Comment Status* **A** *BY alignment*

The editing instructions read 'Insert the following paragraph after the paragraph on 25GBASE-R and before Table 105-1' however there is already a paragraph at the location in IEEE P802.3by draft D3.0 that reads 'Physical Layer devices listed in Table 105-1 are defined for operation at 25 Gb/s.'.

SuggestedRemedy

Suggest the editing instructions should read 'Insert the following new third paragraph:'.

Response *Response Status* **C**

ACCEPT.

Cl **105** *SC* **105.2** *P* **77** *L* **3** # i-175

Law, David — Hewlett Packard Enter

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

Typo, 40GBASE-T should read 25GBASE-T.

SuggestedRemedy

Suggest that 'Insert row for 40GBASE-T after 25GBASE-SR ...' should be changed to read 'Insert row for 25GBASE-T after 25GBASE-SR ...'.

Response *Response Status* **C**

ACCEPT.

Cl **105** *SC* **105.2** *P* **77** *L* **8** # i-29

Hidaka, Yasuo — Fujitsu Laboratories of

Comment Type **E** *Comment Status* **A** *BY alignment*

Title of Table 105-2 includes 25GBASE-R.

SuggestedRemedy

Change 25GBASE-R with 25GBASE in the title of Table 105-2.

Response *Response Status* **C**

ACCEPT. (implemented by i-176)
[Editor's note added after comment resolution was complete:
the resolution to comment i-176 was:
'... clause correlation, 25GBASE-R' be changed to read '... clause correlation for<S>, 25GBASE-R</S><U> 25 Gb/s Ethernet PHYs</U>'.
]

Cl **105** *SC* **105.2** *P* **77** *L* **8** # i-176

Law, David — Hewlett Packard Enter

Comment Type **T** *Comment Status* **A** *BY alignment*

Shouldn't the title of table 105-2 also be changed since 25GBASE-T isn't a 25GBASE-R PHY.

SuggestedRemedy

Suggest that '... clause correlation, 25GBASE-R' be changed to read '... clause correlation for<S>, 25GBASE-R</S><U> 25 Gb/s Ethernet PHYs</U>'.

Response *Response Status* **C**

ACCEPT.

Cl **105** *SC* **105.3** *P* **77** *L* **30** # i-178

Law, David — Hewlett Packard Enter

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

Typo.

SuggestedRemedy

Suggest that text '... of clause 105.3.6 ...' be changed to read '... of subclause 105.3.6 ...'.

Response *Response Status* **C**

ACCEPT.
[Editor's note added after comment resolution: "changed to read '… of 105.3.6' (deleting clause and subclause) to be consistent with style and other comment resolutions]

Cl **105** *SC* **105.3** *P* **77** *L* **32** # i-177

Law, David — Hewlett Packard Enter

Comment Type **T** *Comment Status* **A** *BY alignment*

The third paragraph of subclause 105.3.1 'Reconciliation Sublayer (RS) and 25 Gigabit Media Independent Interface (25GMII)' of IEEE P802.3by reads 'While the 25GMII is an optional interface, it is used extensively in this standard as a basis for functional specification and provides a common service interface for the 25GBASE-R PCS (Clause 107).'. With the addition of 25BASE-T by IEEE P802.3bq the 25GMII will no longer be limited to just the 25GBASE-R PCS.

SuggestedRemedy

Based on the description of the 25GMII found in subclause 1.1.3.2 'Compatibility interfaces' of IEEE P802.3by draft D3.0 that includes the statement that 'The 25GMII is designed to connect a 25 Gb/s capable MAC to a 25 Gb/s PHY' suggest that following change to the third paragraph of subclause 105.3.1 be included in the IEEE P802.3bq draft:

105.3.1 Reconciliation Sublayer (RS) and 25 Gigabit Media Independent Interface (25GMII)

Change the third paragraph of subclause 105.3.1 as follows:

While the 25GMII is an optional interface, it is used extensively in this standard as a basis for functional specification and provides a common service interface for<S> the 25GBASE-R PCS (Clause 107)</S> a 25 Gb/s PHY.

Response *Response Status* **C**

ACCEPT.

Cl **105** *SC* **105.5** *P* **78** *L* **12** # i-179

Law, David — Hewlett Packard Enter

Comment Type **T** *Comment Status* **A** *PMA/PMD*

I don't believe that there is a 25GBASE-T PMD, only a 25GBASE-T PCS and a 25GBASE-T PMA (see Figure 113-1).

SuggestedRemedy

Suggest that '25GBASE-T PMD' be changed to read '25GBASE-T PHY'.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113** *P* **79** *L* **1** #

Rolfe, Benjamin — Blind Creek Associate

Comment Type **E** *Comment Status* **R** *LATE - Editorial*

(LATE) Missing editing instructions

SuggestedRemedy

Probably something like "insert the following sub-clause following clause 112" ?

Response *Response Status* **C**

REJECT.
Introduction (page 12) states: "This amendment includes changes to IEEE Std 802.3-2015 and adds Clause 113 and Annex 113A."
Amendments adding entire new clauses do not generally have additional editing instructions to add them.

Cl **113** *SC* **113.1** *P* **79** *L* **19** # i-39

RAN, ADEE — Intel Corporation

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

Sentence refers to many things that are defined in this clause, not just two. "Both" seems out of place.

SuggestedRemedy

Delete "both".

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.1** *P* **79** *L* **24** # i-28

Hidaka, Yasuo — Fujitsu Laboratories of

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

Reference to table for associated sublayers and options is given only for 40GBASE-T.

SuggestedRemedy

Change the last sentence of second paragraph of clause 113.1 as follows:
Please refer to Table 105-2 and Table 80-2 for associated sublayers and options for assembling a 25 Gb/s system with the 25GBASE-T PHY and a 40 Gb/s system with the 40GBASE-T PHY, respectively.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.1** *P* **79** *L* **33** # i-40

RAN, ADEE — Intel Corporation

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

It is not immediately clear that advertising lack of support for fast retrain is done in auto-negotiation. Only looking at 45.2.7.10 reveals that.

Clause 45 is optional, and the way auto-negotiation is controlled can be different, perhaps with a different register address or without any register.

SuggestedRemedy

Change "advertising lack of support in register 7.32" to "advertising lack of support during auto-negotiation".

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.1.** *P* **87** *L* **26** # i-53

RAN, ADEE — Intel Corporation

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

"specifically specified" is redundant.

SuggestedRemedy

Change to "unless specified"

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.1.1** *P* **79** *L* **48** # i-124

Donahue, Curtis

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

Change "diffferent" to "different".

SuggestedRemedy

See comment (remove third "f").

Response *Response Status* **C**

ACCEPT. Implemented by comment i-130

[Editor's note added after comment resolution was complete:
the resolution to comment i-130 was:
Change "diffference" to "difference".
]

Cl **113** *SC* **113.1.1** *P* **79** *L* **48** # i-130

Thompson, Geoffrey — GraCaSI S.A.

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

There is a misspelling.

SuggestedRemedy

Change "diffference" to "difference".

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.1.1** *P* **79** *L* **50** # i-41

RAN, ADEE — Intel Corporation

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

4-bit and 32-bit

SuggestedRemedy

Change spaces to hyphens

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.1.1** *P* **81** *L* **46** # i-133

Schicketanz, Dieter — Reutlingen Universty

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

The parameter S which is used to calculate the link frequency range is defined here but used multiple times in the link formulas. But there tt is not mentioned any more like frequency and others.

SuggestedRemedy

Repeat in all formulas the definition of S

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add at the end of the first paragraph in 113.7.2 ….

The parameter S is used in 113.7.2 to scale the data rate for each PHY. For 25GBASE-T, S = 0.625 and for 40GBASE-T, S = 1.

Cl **113** *SC* **113.1.3** *P* **80** *L* **43** # i-42

RAN, ADEE Intel Corporation

Comment Type **G** *Comment Status* **A** *Editorial*

Here "Megasymbols per second" is used, later in this subclause and in 113.1.3.2 it's Msymbol/s. Consistency is preferred.

In many other clauses (including clause 40) the unit in used is Baud, with the relevant abbreviation being GBd. It is a well-understood terminology.

SuggestedRemedy

Use consistent units throughout the draft. Preferably, change to 2 GBd, 3.2 GBd , 3.2*S GBd.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Adopt consistent terminology within the clause. Msymbols/s terminology is consistent with Clause 55) - change "Megasymbols per second" (2 instances P80, L43 & 44) to "Msymbols/s"

Cl **113** *SC* **113.1.3** *P* **81** *L* **25** # i-43

RAN, ADEE Intel Corporation

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

"two second retrain" is confusing. "Second" is a unit, and according to the style guide should be abbreviated.

SuggestedRemedy

Change "two second" to either "two-second" or "2 s".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change "two second" to "two-second"

Cl **113** *SC* **113.1.3** *P* **83** *L* **1** # i-44

RAN, ADEE Intel Corporation

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

In Figure 113-3, note 2 says items are shown in dashed boxes, but the boxes are not dashed. The box pattern is almost solid hatched lines and is difficult to discern from other lines.

Dashed boxes do appear in the similar Figure 113-23. This is much more clear.

These boxes denote either of the optional capabilities, not just EEE.

SuggestedRemedy

Preferably, make the boxes dashed as in Figure 113-23. If not, label them "hatched boxes" instead.

In note 2, change "only required for EEE" to "only required for these capabilities".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Do not change note 2. 'these capabilities' is unclear. EEE capabilities are indicated and consistent with existing 802.3 clauses.
[Editor's note added after comment resolution - make boxes dashed, but do not change note 2]

Cl **113** *SC* **113.1.3.1** *P* **84** *L* **23** # i-45

RAN, ADEE Intel Corporation

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

"192, 8 bit symbols"

SuggestedRemedy

Change to "192 8-bit symbols".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change to "192 eight-bit symbols" (IEEE style guide says to spell out numbers less than ten).

Cl **113** *SC* **113.1.3.1** *P* **84** *L* **25** # i-46

RAN, ADEE — Intel Corporation

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

The letter "x" is used here to denote multiplication. A slanted multiplication character is used in nearby places. "x" is used again in page 98.

Comment also applies to Figure 113-8, Table 113-7, Table 113-8, and 113.3.6.2.5

SuggestedRemedy

Replace all "x" and slanted multiplication signs to the multiplication character (as in 55.1.3.1).

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.1.3.1** *P* **84** *L* **30** # i-47

RAN, ADEE — Intel Corporation

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

"The DSQ128 symbols are obtained by concatenating two time-adjacent 1D PAM16 symbols and retaining among the 256 possible Cartesian product combinations, 128 maximally spaced 2D symbols."

This sentence is a verbatim copy of a sentence in the parent clause 113.1.3 (P80 L48). These are very close pieces of text; the repetition does not seem necessary.

SuggestedRemedy

Delete one of the copies (preferably the first).

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Delete the sentence indicated in the first instance, 113.1.3 P80 L48.

Cl **113** *SC* **113.1.3.1** *P* **84** *L* **34** # i-38

Hidaka, Yasuo — Fujitsu Laboratories of

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

The seventh paragraph of clause 113.1.3.1 "The DSQ128 constellation is partitioned into 16 subsets ..." is not consistent with slide 9 of
http://www.ieee802.org/3/an/public/sep04/ungerboeck_2_0904.pdf
that is the basis of DSQ128 bit mapping described in the second paragraph of clause 113.3.2.2.21.
In the above paragraphs, the four LDPC-coded bits and three RS-FEC-coded (or uncoded) bits are swapped.
The sixth paragraph of clause 55.1.3.1 has the same problem and needs a maintenance change.

SuggestedRemedy

Change the paragraph as follows:
The DSQ128 constellation is partitioned into eight subsets, each subset containing 16 maximally spaced 2D symbols. The three RS-FEC-coded bits of each 7-bit label select one DSQ128 subset, and the four LDPC-coded-bits of the label select one 2D symbol in this subset.

Response *Response Status* **C**

ACCEPT.
Commenter is recommended to put in a maintenance request on clause 55.

Cl **113** *SC* **113.1.3.1** *P* **84** *L* **40** # i-48

RAN, ADEE Intel Corporation

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

"Details of the PCS function are covered in 113.3"

This sentence does not seem to belong in this paragraph, which deals with the PMA.

The former several paragraphs dealt with the PCS transmit operation (as a summary/overview). The next two paragraph summarize the receiver operation and include "The PCS functions and state diagrams are specified in 113.3".

Reference to the detailed description should be put at the end.

SuggestedRemedy

Merge the two sentences "Details of the PCS function are covered in 113.3" and "The PCS functions and state diagrams are specified in 113.3", and move the result to a separate paragraph ending this subclause.

Consider moving the sentence "The interface to the PMA is an abstract message-passing interface specified in 113.2" to this final paragraph too.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Implement suggested remedy as well as moving the sentence "The interface to the PMA…" as suggested.

Cl **113** *SC* **113.1.3.2** *P* **85** *L* **13** # i-49

RAN, ADEE Intel Corporation

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

"discrete time value" can be confusing.

SuggestedRemedy

change to "discrete-time value"

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.1.3.2** *P* **85** *L* **28** # i-50

RAN, ADEE Intel Corporation

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

This sentence ends with "...or whether the PHY sends special PAM2 code-groups that are used in the training mode". But training mode affects the receiver behavior too. Also, data transmission (mentioned in normal mode) is disabled, but here it is not mentioned.

The next sentence, "The latter occurs when either one or both of the PHYs that share a link segment are not operating reliably.", seems incorrect. Training mode is part of link creation and has nothing to do with reliablility.

SuggestedRemedy

Change from
"or whether the PHY sends special PAM2 code-groups that are used in the training mode"
to
"or in training mode, in which it sends and receives special PAM2 code-groups and data transmission is disabled."

In addition, either delete the last sentence of this paragraph, or rephrase it so it becomes correct.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Implement suggested remedy, deleting the last sentence of the paragraph. ("The latter occurs… reliably.")

Cl **113** *SC* **113.1.3.3** *P* **86** *L* **24** # i-51

RAN, ADEE — Intel Corporation

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

"Infofield" occurs here fore the first time. It has no definition in 1.4. What is it?

In 113.4.2.5 it is called "InfoField". Capitalization is inconsistent across this draft.

Also "link startup" is vague. InfoFields are used in training mode.

SuggestedRemedy

Provide a cross reference (113.4.2.5). Consider adding a definition in 1.4.

Change "during link startup" to "in training mode".

Scan the draft for various capitalization of "InfoField" and make them consistent.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Insert definition of Infofield to 1.4 (alphabetically)
"Infofield - A sixteen octet frame transmitted at regular intervals containing messages for startup operation by certain PHYs (see IEEE Std 802.3 Clause 55 and Clause 113)"

Change all "InfoField" to "Infofield"

Cl **113** *SC* **113.1.5** *P* **87** *L* **12** # i-52

RAN, ADEE — Intel Corporation

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

"All 25GBASE-T and 40GBASE-T PHY implementations are compatible at the MDI" - that is a very optimistic statement... written as a fact.

It seems that this sentence attempts to define the MDI as the compatibiilty point. If that's the case, it should be resphrased.

SuggestedRemedy

Change
"All 25GBASE-T and 40GBASE-T PHY implementations are compatible at the MDI, and at the 25GMII/XLGMII, if implemented"
to
"The compatibility of 25GBASE-T and 40GBASE-T PHY implementations is specified at the MDI and at the 25GMII/XLGMII".

Response *Response Status* **C**

REJECT.
Language is consistent with other BASE-T PHYs specified in 802.3bq.

Cl **113** *SC* **113.11** *P* **196** *L* **27** # i-97

RAN, ADEE — Intel Corporation

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

Equation 44-1 and Table 44-3 are specific to 10 Gb/s. For higher bit rates, the calculation should be modified due to the different definition of Bit Time. See Equation 80-1, Table 80-5 (should be updated to include 40GBASE-T) and Equation 105-1, Table 105-3 (which should be updated to include 25GBASE-T).

SuggestedRemedy

Refer to the suggested tables and equations.

Add editing instructions to add the BASE-T PHYs to the tables.

Response *Response Status* **C**

ACCEPT.
[Editor's note (after comment resolution was complete) - Table 105-3 in 802.3bq D3.0 already included 25GBASE-T, and needed no change to the draft]

Cl **113** *SC* **113.2.2** *P* **90** *L* **1** # i-57

Hajduczenia, Marek — Bright House Network

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

Dashed line in Figure 113-4, and other figures in the draft, are very dense.

SuggestedRemedy

Please use less dense dashed line - it is hard to distinguish continuous and dashed lines.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.2.2** *P* **90** *L* **3** # i-54

RAN, ADEE Intel Corporation

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

In Figure 113-4, the optional signals appear in a hatched box. The exact same hatch pattern appears in other places in the diagram, as an interface boundary.

There is no reference to this box in the note (as in Figure 113-3).

SuggestedRemedy

Change the hatched pattern of this box (only) to a dashed line.

Consider adding indication of this box in the NOTE.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
No note needed, these relate to EEE and the use of dash has already been stated.
(Editor's note - after comment resolution - implement changing hatched pattern of this box to a dashed line)

Cl **113** *SC* **113.2.2** *P* **90** *L* **42** # i-56

Hajduczenia, Marek Bright House Network

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

Missing space in "RXC<3:0>, RXD<31:0>, TXC<3:0>,and TXD<31:0>," between "," and "and".
Also, sentence finishes with "," and should with "."

SuggestedRemedy

Per comment

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.2.2** *P* **90** *L* **42** # i-58

Hajduczenia, Marek Bright House Network

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

"a 4 bit control word and 32 bit data word" - adjectives made from multiple compound words should be hyphenated.

SuggestedRemedy

Change to "a 4-bit control word and 32-bit data word"
Scrub the rest of the draft for similar instances (there are multiple)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change to "a four-bit control word and 32-bit data word".

Cl **113** *SC* **113.2.2.11.1** *P* **96** *L* **9** # i-55

RAN, ADEE Intel Corporation

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

Semantics details of the primitives are missing.

Also in 113.2.2.12.1.

SuggestedRemedy

Add the values of pcs_data_mode and fr_active and their meanings (as in previous primitives).

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Add pcs_data_mode values to 113.2.2.11.1
(after line 9)
The pcs_data_mode parameter can take on one of two values of the form:
TRUE = PHY is in state PCS_Data (see Figure 113-30)
FALSE = PCS is not in state PCS_Data (see Figure 113-30).

Similarly fr_active values to 113.2.2.12.1, for values:
TRUE = PHY is currently performing a fast retrain
FALSE = PHY is not currently performing a fast retrain

Cl **113** *SC* **113.3.2.2** *P* **118** *L* **11** # i-99

Zimmerman, George Aquantia, and CommS

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

Text only mentions 25GMII, although it also speaks to XLGMII. "rx_coded<64:0> which is then decoded to form the 25GMII signals RXD<31:0> and RXC<3:0> for 25GBASE-T or RXD<63:0> and RXC<7:0> for 40GBASE-T,"

SuggestedRemedy

Change insert "the XLGMII signals" after 25GBASE-T, so it reads: "rx_coded<64:0> which is then decoded to form the 25GMII signals RXD<31:0> and RXC<3:0> for 25GBASE-T or the XLGMII signals RXD<63:0> and RXC<7:0> for 40GBASE-T,"

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.3.2.2** *P* **98** *L* **21** # i-125

Donahue, Curtis

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

Change " 40GBASE_T" to " 40GBASE-T".

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.3.2.2** *P* **98** *L* **50** # i-66

RAN, ADEE Intel Corporation

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

6x513B and 2x65B bits?

SuggestedRemedy

Delete either the B's or "bits".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change "the 6x513B and 2x65B bits" to "the six blocks of 513B transcoded bits and the two blocks of 65B encoded bits"

Cl **113** *SC* **113.3.2.2.10** *P* **107** *L* **6** # i-69

RAN, ADEE Intel Corporation

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

EEE is an optional capability. PHYs may support EEE or not, but it is not a separate standard.

For optional features the usual term is "support". "PHYs that support EEE" (or other features like fast retratin) is very common in 802.3. "EEE compliant" is seldom used (only twice in clause 55).

SuggestedRemedy

Change "EEE compliant PHYs" to "PHYs that support EEE" throughout clause 113.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.3.2.2.16** *P* **108** *L* **19** # i-70

RAN, ADEE Intel Corporation

Comment Type **GR** *Comment Status* **A** *Editorial*

Multiple issues with this subclause:

1. The lists is not in list format, and do not have the required indentation.
2. Multiple lists in the same subclause require separate numbering. The second list should be changed to a1, b1, c1, the third should be a1, b2, c2. (see 85.8.3.3 for an example).
3. In the "b" item of the second list, "8-k" should use a minus sign instead of a hypen, "C={1,4)" should have a right curly brace.
4. In the "c" item of the second list, it is not clear which 4-bit code is referred. Should it be the rightmost column of Table 113-4? Please rephrase to clarify.
5. In the paragraph that starts with "Given this," the words "can be constructed" refer to "a 513-bit block". It seems that they should be preceded by a space, or the sentence re-ordered.
6. Missing periods at the end of sentence in "c" item of the third list, and the paragraph which follows ("The resulting translation...").
7. List items within the examples should have distinct labels, and preferably without sub-list items "a.". It may be better to move the examples to a separate subclause.
8. When j/k/C/U is used as an index, as in tx_coded_j, the index variable should be italicized. But j is never italicized and, k, C and U are inconsistently italicized.

SuggestedRemedy

Address all issues as listed in the comment body, in this subclause and the tables and figures within it.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Address all issues as commenter suggests, except for third list in item 2:
commenter says a1, b2, c2 - it should be a2, b2, c2
(Clause 85 doesn't provide an example of this)

Cl **113** *SC* **113.3.2.2.19** *P* **113** *L* **7** # i-71

RAN, ADEE Intel Corporation

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

"The use of the auxiliary bit for vendor-specific communication is outside the scope of this document. It is highly recommended that the auxiliary bit be randomized. For the purposes of this standard it is ignored by the link partner, as are the random fill bits".

It is not clear what these sentence mean in the context of the LDPC encoder. They do not seem to be encoded. Is the encoder required or expected to use specific values or are they left to implementation choice? The decoder behavior should be stated in the decoder subclause, not the encoder subclause.

SuggestedRemedy

Delete these sentences.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
These bits are not encoded by the LDPC encoder. The descriptive language of this section covers more than just the encoder, but also the LDPC frame

Change title of 113.3.2.2.19 to LDPC framing and LDPC encoder

Cl **113** *SC* **113.3.2.2.19** *P* **113** *L* **8** # i-72

RAN, ADEE Intel Corporation

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

The text can be interpreted as if the first 1536 bits of the payload are RS-FEC encoded and the final 1732 are LDPC encoded. But Figure 113-8 (which is not referenced here) and subclause 113.3.2.2.20 (also not referenced here) suggest a different division scheme. 113.3.2.2.20 does define how the RS-FEC codeword is constructed, but figuring out the LDPC construction is difficult, and the way this is shown is quite confusing.

SuggestedRemedy

State clearly in the text how the LDPC 1723-bit payload is constructed from the 513B and 65B blocks, similar to the RS-FEC payload construction details in 113.3.2.2.20.

Align the text with Figure 113-8 if necessary.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Existing text is similar in construction to uncoded and LDPC encoded bits in clause 55 which has been clearly understood.

Add on line 10 (after "in Annex 55A.") "See Figure 113-8 and subclause 113.3.2.2.20 for details on PCS bit ordering and RS-FEC encoding."

Cl **113** *SC* **113.3.2.2.20** *P* **114** *L* **8** # i-73

RAN, ADEE Intel Corporation

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

"(Note that two random fill bits must be transmitted instead of zeros, and then this information is discarded upon receipt)"

"Must" here does not seem to describe an unavoidable situation. Does it stand for a normative requirement, or a recommendation?

If it is normative, how is this randomness specified? would a constant value chosen at random, and alternating 10, or a PRBS31 output sufficiently random?

Would any damage occur if these bits just contain zeros?

Is the RS-FEC parity calculated with zeros in these two bits and then they are replaced by other bits? This would make these bits unprotected by RS-FEC, and may not be useful for implementers.

SuggestedRemedy

Delete the quoted note from this location. It only creates confusion in understanding the RS-FEC encoder.

If replacing the zero bits is important, make it a normative requirement, and state clearly what these bits should contain instead of zeros. For example, the output of some LFSR or a copy of previous bits. Use "shall" instead of "must".

Alternatively, make it a recommendation to replace these bits by implementation-dependent arbitrary bits, and add a note that the arbitrary bits are not protected by RS-FEC.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change to read "(It is highly recommended that two random fill bits be transmitted instead…"

Cl **113** *SC* **113.3.2.2.8** *P* **106** *L* **43** # i-67

RAN, ADEE Intel Corporation

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

"to account for self-synchronizing scrambler error propagation" - this may be the motivation for this rule (part of the rule), but should not be the rule itself. For people unfamiliar with "self-synchronizing scrambler error propagation" this adds an unnecessary confusion.

SuggestedRemedy

Delete "to account for self-synchronizing scrambler error propagation", or move it to a NOTE.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Delete "to account for self-synchronizing scrambler error propagation"

Cl **113** *SC* **113.3.2.2.9** *P* **106** *L* **52** # i-68

RAN, ADEE Intel Corporation

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

two periods..

SuggestedRemedy

Delete one period.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.3.2.2.9** *P* **106** *L* **53** # i-112

Donahue, Curtis

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

Extra "." at end of sentence

SuggestedRemedy

delete.

Response *Response Status* **C**

ACCEPT. Implemented by comment i-68

[Editor's note added after comment resolution was complete:
the resolution to comment i-68 was:
Delete one period.
]

Cl **113** *SC* **113.3.2.3** *P* **118** *L* **16** # i-75

RAN, ADEE Intel Corporation

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

"the receive process inserts idles, delete idles, or delete sequence ordered sets"

Inconsistent verb form.

SuggestedRemedy

Change to
"the receive process inserts idles, deletes idles, or deletes sequence ordered sets".

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.3.3** *P* **120** *L* **4** # i-76

RAN, ADEE Intel Corporation

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

Missing terminating period

SuggestedRemedy

Add a period after "113.5.2".

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.3.4** *P* **120** *L* **18** # i-77

RAN, ADEE Intel Corporation

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

The italics vs. Moman font type in Figure 113-15 is inconsistent both internally and with regards to the text preceding it. As a result the italics distract rather than help.

In the text, n is a variable that appears in italics, but in the figure it sometime is and sometimes isn't. Likewise, Scr is not italicized (not a variable) in the text, but in the figure it sometimes is and sometimes isn't.

The number "1" appears italicized in the figure within "n-1", it looks like the letter l. Numbers should never be italicized.

The word "otherwise" is in italics although it is not a variable.

SuggestedRemedy

Make the variable "n" always italicized in Figure 113-15.

If "Scr" is a variable then make it consistently italicized (and likewise for Sa, Sb, Sc, Sd) in the figure and in the clause text; otherwise make it consistently Roman.

Make everything else Roman.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.3.4.2** *P* **121** *L* **18** # i-78

RAN, ADEE Intel Corporation

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

"If requested by the link partner, the PCS shall reset the training mode scrambler every 16384 periods..."

This functionality is deprecated for 10G. Should it exist here?

SuggestedRemedy

Delete the second sentence.

Response *Response Status* **C**

ACCEPT. (this was supposed to have been removed)

Cl **113** *SC* **113.3.4.2** *P* **121** *L* **24** # i-87

RAN, ADEE Intel Corporation

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

InfoField is mentioned here but it is defined only much later, in 113.4.2.5.

SuggestedRemedy

Add a cross-reference to 113.4.2.5.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Definition added to 1.4 by comment i-51

[Editor's note added after comment resolution was complete:
the resolution to comment i-51 was:
Insert definition of Infofield to 1.4 (alphabetically)
"Infofield - A sixteen octet frame transmitted at regular intervals containing messages for startup operation by certain PHYs (see IEEE Std 802.3 Clause 55 and Clause 113)"

Change all "InfoField" to "Infofield"
]

Cl **113** *SC* **113.3.5** *P* **122** *L* **4** # i-79

RAN, ADEE Intel Corporation

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

"R" label in the box seems to refer to the refresh cycle, but it is not readily apparent. The detailed description of "Pair A" does not include "R".

SuggestedRemedy

Add "R" under the "refresh" label for pair A.

Consider adding, either in a note in the figure or in the text, an indication that R denotes to the refresh period.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change "refresh" on pair A to "refresh (R)"

Cl **113** *SC* **113.3.5.2** *P* **123** *L* **44** # i-126

Donahue, Curtis

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

Change "-41dBm" to "-41 dBm".

SuggestedRemedy

See comment (add space).

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.3.6.2.2** *P* **125** *L* **34** # i-81

RAN, ADEE Intel Corporation

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

It seems that both LDPC and RS-FEC should be have no errors to declare a valid frame.

Also, "uncorrectable error" for the RS-FEC is not defined anywhere. This might mean that the received codeword had no more than t=3 8-bit symbol errors, but it is not obvious for a non-expert reader. Also, it is not clear that errors that are not uncorrectable are actually corrected, and that uncorrected errors must be identified as such (some implementations might not check the syndrome after a correction attempt).

To align with the LDPC definition, the RS-FEC definition should be stated in terms of the correctness (not correctablity) of the codeword.

SuggestedRemedy

Change "valid if:" to "valid if both:"

Change item b to read:
b. The RS-FEC-coded bits form a valid RS-FEC codeword.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change "valid if:" to "valid if both:

Change item b to read:
b. The RS-FEC-coded bits, after decoding, form a valid RS-FEC codeword.

Cl **113** *SC* **113.3.6.2.2** *P* **126** *L* **13** # i-80

RAN, ADEE Intel Corporation

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

"when the lfer_cnt exceeds 16" - but lfer_cnt is defined as "Count up to a maximum of 16" so it cannot exceed 16. Figure 113-17 sets hi_lfer to true at 16.

SuggestedRemedy

Change "excceeds" to "reaches".

Response *Response Status* **C**

ACCEPT.
Commenter is suggested to put a maintenance request on clause 55, where the same text exists.

Cl **113** *SC* **113.3.6.2.2** *P* **127** *L* **5** # i-82

RAN, ADEE Intel Corporation

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

There is no reference to register 1.147.2 in this draft. It appears in the base document but only points to the variable list in clause 55. A reference to clause 133 should be added.

In addition, it would be better to define the functionality here, not just in clause 45. Since MDIO is optional, other means to access this variable may be provided.

Similar issue exists for fr_enable (1.147.0) in 113.4.5.1. it is defined in 45.2.1.79.6 and does not reference clause 113.

SuggestedRemedy

Change the first paragraph of the definition to:
"If fast retrain is supported, this variable controls the block type the PMA sends on the receive path during fast retrain. if MDIO is supported, this variable is set based on the value in 1.147.2:1 as follows".

Append a paragraph: "If MDIO is not supported, an equivalent method of controlling fast retrain functionality should be provided".

Bring in 45.2.1.79.5 and add a reference to 113.3.6.2.2.

Apply similar change to 45.2.1.79.6 and 113.4.5.1.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.3.6.2.3** *P* **127** *L* **17** # i-83

RAN, ADEE Intel Corporation

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

lfer_timer implies the triggering frames error ratio for 40G is equal to that of 10G (clause 55 uses 125 us). What about 25G?

SuggestedRemedy

Change 25/4 to 25/(4S) (S italicized).

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change "125/4 usec" to "125/(4xS)" usec (S is italicized, x is multiplication symbol.)

Cl **113** *SC* **113.3.7.2** *P* **136** *L* **42** # i-84

RAN, ADEE Intel Corporation

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

According to Figure 113-22, during SEND_WAKE we have:
tx_lpi_alert_active=false (deasserted in this state)
tx_lpi_qr_active=false (deasserted in SEND_ALERT)

So according to the definition of lpi_tx_mode, we get lpi_tx_mode=QUIET during SEND_WAKE.

That does not seem correct, although the corresponding diagram in Figure 55-20 is similar.

SuggestedRemedy

I assume tx_lpi_qr_active should be asserted to true in SEND_WAKE, to enable REFRESH signaling. But perhaps something else should be done.

Response *Response Status* **C**

REJECT.
The definition of tx_lpi_qr_active is A Boolean variable that is set true during the LPI transmit mode, when the PHY is transmitting quiet-refresh signaling. Set false otherwise.

The WAKE signal is not a quiet-refresh signal. It is composed of LDPC frames (512B/513B and 64/65B blocks) of Idle (/I/) signals.

Cl **113** *SC* **113.4.1** *P* **137** *L* **31** # i-105

Zimmerman, George Aquantia, and CommS

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

Missing dot on connection from scr_status to LINK MONITOR in Figure 113-23

SuggestedRemedy

add dot per comment

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.4.1** *P* **137** *L* **51** # i-59

Hajduczenia, Marek Bright House Network

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

Test in NOTE2 is a fulls sentence, but does not have "." at the end.

SuggestedRemedy

Please scrub existing NOTEs and Footnotes, and make sure that full sentences are followed by "."

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.4.2.2** *P* **138** *L* **40** # i-85

RAN, ADEE Intel Corporation

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

"An EEE-capable PHY shall operate with loop timing when configured as SLAVE"

This statement is redundant in this clause, since loop timing is always performed on the SLAVE side, regardless of EEE support. (In clause 55, SLAVE could work without loop timing, and this sentence seemed to be an exception. But it is not an exception here).

SuggestedRemedy

Delete this sentence.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.4.2.2.1** *P* **139** *L* **3** # i-86

RAN, ADEE Intel Corporation

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

"will" seems to be a normative requirement here.

SuggestedRemedy

Change "will" to "shall".

Response *Response Status* **C**

ACCEPT. (implemented by i-89)
[Editor's note added after comment resolution was complete:
the resolution to comment i-89 was:

P114 L2 see comment i-73 to remove "must"
P122 L24 describes a desired state, not a requirement, what follows states the requirements to achieve this. Delete "must" on P122 L24

P148 L14 change "must set" to "sets"

P92 L24, P110 L1, L4, and L13, P124 L4 change "will be" to "is"

P127 L18 delete "will" to read "When the timer reaches its terminal count, lfer_timer_done = TRUE".

P139 L3 delete "will"

P150 L36 and L37 change "will" to "shall" to read: "If the link partner requested THP bypass for fast retrain the PHY shall bypass the THP (or set THP coefficients to zero). Otherwise the PHY shall keep its THP turned on with its previously exchanged coefficients, and send PAM2 signaling within a time period equivalent to 9 LDPC frame periods." and update PICS.

P178 L6 change "will be used to refer" to "used in this clause refers"

P92 L18 replace "may take on" with "takes on"
P92 L19 replace "may additionally take on" with "additionally takes on"

P130 L8, L9 - change "may not" to "are not guaranteed to be" (L8) and "are not guaranteed to" (L9)

P149 L35 change "may not be" to "are not" to read: "The THP coefficients and PBO setting are not changed during PMA_Fine_Adjust."

P171 L17, P176 L14, P195 L27 change "may" to "can"
P195 L19 and P197 L10 change "may be" to "are"
P195 L26 delete "may"
]

Cl **113** *SC* **113.4.2.3.1** *P* **140** *L* **26** # i-113

Donahue, Curtis

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

. at the end of the sentence should be ":".

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.4.2.4** *P* **141** *L* **39** # i-114

Donahue, Curtis

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

pairs BI_DA, BI_DB, BI_DC, and BI_DB. Second instance of "BI_DB" should be "BI_DD".

SuggestedRemedy

Change second "BI_DB" to "BI_DD".

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.4.2.5** *P* **142** *L* **32** # i-115

Donahue, Curtis

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

The InfoField is also denoted IF. While there is nothing wrong with this statement, the only use of "IF" instead of "InfoField" is twice in the following sentence. Is it necessary?

SuggestedRemedy

Remove the sentence "The InfoField is also denoted IF." and in the following sentence change "IF" and "IFs" to "InfoField" and "InfoFields" respectively.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.4.2.5.11** *P* **146** *L* **46** # i-88

RAN, ADEE — Intel Corporation

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

Does tilde-equal means "not equal"?

SuggestedRemedy

Change to a non-equal sign (or whatever it should be).

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Replace "~=" with "!="
(consistent with Section 5 of IEEE Std 802.3-2012)

Cl **113** *SC* **113.4.2.5.6** *P* **144** *L* **47** #

Rolfe, Benjamin — Blind Creek Associate

Comment Type **T** *Comment Status* **A** *LATE - PMA*

(LATE) The phrasing "Any other value shall not be transmitted and shall be ignored at the receiver" is imprecise. A device that ignores only 1 value not listed in table 113-12 would comply. I suspect "all" is what is really intended.

SuggestedRemedy

Change "any" to "all"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change "Any other value shall not be transmitted and shall be ignored at the receiver" to read
"No other value shall be transmitted, and all other values shall be ignored at the receiver."

Cl **113** *SC* **113.4.5.1** *P* **153** *L* **39** # i-90

RAN, ADEE — Intel Corporation

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

Inconsistent right margin and justification for the variable definitions. Line breaks seem to be present where they should not.

SuggestedRemedy

Apply paragraph formatting suitable for list of variables as in other lists in this draft.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.4.5.1** *P* **155** *L* **19** # i-116

Donahue, Curtis

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

The definition for THP_next starts with "THP is a variable that contains". Should it be "THP_next"?

SuggestedRemedy

Change "THP" to "THP_next". Additionally, the same issue occurs in the THP_tx definition. Change "THP" to "THP_tx" there too.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.4.5.1** *P* **155** *L* **6** # i-106

Zimmerman, George — Aquantia, and CommS

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

Typo and incorrect reference in pcs_status request primitive - "PMA_SCRSTATUS.request primitive (see 113.2.2.5)" obviously means to refer to PCSSTATUS, not SCRSTATUS, and the cross reference needs to match too.

SuggestedRemedy

Replace SCRSTATUS with PCSTATUS and 113.2.2.5 cross reference with 113.2.2.6 cross reference (to match PCSSTATUS).

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.4.6.2** *P* **160** *L* **1** # i-60

Hajduczenia, Marek — Bright House Network

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

Inconsistencies in font size and text box styles in individual state diagrams, e.g., when comparing Figure 113-31 and Fig
re 113-32

SuggestedRemedy

Please align font sizes and text box styles at least within this amendment.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.5.2.1** *P* **168** *L* **20** #

Rolfe, Benjamin — Blind Creek Associate

Comment Type **E** *Comment Status* **A** *LATE - Editorial*

(LATE) Figure 113–38 I suspect "(need to update)" is obsolete. Otherwise this draft would be technically incomplete and not ready to ballot.

SuggestedRemedy

Delete "(need to update)"

Response *Response Status* **C**

ACCEPT.
Implemented by comment i-91

[Editor's note added after comment resolution was complete:
the resolution to comment i-91 was:
Delete "(need to update)" update was completed long ago.
]

Cl **113** *SC* **113.5.2.1** *P* **168** *L* **21** # i-91

RAN, ADEE — Intel Corporation

Comment Type **GR** *Comment Status* **A** *EZ*

Figure title includes "need to update". What does it mean?

SuggestedRemedy

Update what's needed, and delete this part of the title.

Response *Response Status* **C**

ACCEPT.
Delete "(need to update)" update was completed long ago.

Cl **113** *SC* **113.5.2.1** *P* **168** *L* **21** # i-117

Donahue, Curtis

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

The title for Figure 113-38 is "Transmitter test fixture 3 for transmitter jitter measurement (need to update)". I'm assuming "(need to update)" was some kind of note for the editor and shouldn't be in the figure title.

SuggestedRemedy

Remove the "(need to update)". And additionally update the figure appropriately if necessary.

Response *Response Status* **C**

ACCEPT.
Implemented as comment i-91

[Editor's note added after comment resolution was complete:
the resolution to comment i-91 was:
Delete "(need to update)" update was completed long ago.
]

Cl **113** *SC* **113.5.3.3** *P* **169** *L* **12** #

Rolfe, Benjamin — Blind Creek Associate

Comment Type **E** *Comment Status* **A** *LATE - PMA*

(LATE) "The SLAVE mode RMS period jitter test shall be run using the test configuration shown in Figure 113–3" sounds a lot like a requirement on a pesron, not a conforming device. Behavior of people is outside the scope of this standard.

SuggestedRemedy

Change "shall be run" to "is measured" (consistent with elsewhere in this standard)

Response *Response Status* **C**

ACCEPT.
Commenter may consider maintenance on same statement in clause 55.

Cl **113** *SC* **113.5.3.4** *P* **170** *L* **16** # i-61

Hajduczenia, Marek — Bright House Network

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

Is there any reason for the Y axis title be displayed in this form?

SuggestedRemedy

Typically, Y axis title is displayed in 90deg rotation, for example see Figure 85-4--Maximum insertion loss TP0 to TP2 or TP3 to TP5 in IEEE Std 802.3-2012 version

Response *Response Status* **C**

ACCEPT. Implemented as i-107
[Editor's note added after comment resolution was complete:
the resolution to comment i-107 was:
Change vertical axis label to rotated text
]

Cl **113** *SC* **113.5.3.4** *P* **170** *L* **16** # i-107

Zimmerman, George — Aquantia, and CommS

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

Figure 113-39 vertical axis label is stacked, vs. rotated as most other similar 802.3 plots are.

SuggestedRemedy

Change vertical axis label to rotated text

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.5.3.4** *P* **170** *L* **18** # i-92

RAN, ADEE — Intel Corporation

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

The y axis label is written vertically with horizontal letters, and the plot seems to be hand-drawn. Compare to figure 55-37.

SuggestedRemedy

Redraw figure as vector plot with thinner lines, set y-axis title correctly.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Plot is embedded Excel. Y axis fixed by comment i-107

Cl **113** *SC* **113.5.3.5** *P* **170** *L* **45** # i-93

RAN, ADEE — Intel Corporation

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

Does the frequency variation requirement also apply to SLAVE PHYs?

Specifically, since asymmetric LPI operation is possible, the SLAVE clock recovery function has no clock to track for extended periods when the MASTER is in LPI. The SLAVE TX has to use loop-timing clock during that time. What are the frequency/phase requirements when the MASTER is in LPI? Holding the open-loop frequency within 0.1 ppm/second of the closed-loop frequency seems challenging. I don't see another value specified for the slave.

Also, there is no test mode that enables measurement of the SLAVE frequency when MASTER is going in and out of LPI.

SuggestedRemedy

If SLAVE is subject to the specifications in the second paragraph, state it explicitly.

If not, state that it only holds for MASTER, and specify separately what is required from SLAVE, especially with MASTER in LPI.

If anything is required from SLAVE, please address how it can be validated.

Response *Response Status* **U**

REJECT.
Commenter does not provide specific sufficient remedy.

This is the exact text in clause 55 and was not misunderstood. A slave which does not keep timing would fail BER and other requirements of the clause. Experts in the BRC understood the requirement to apply to both master and slave and was correct as written.

Cl **113** *SC* **113.5.4.1** *P* **171** *L* **6** #

Rolfe, Benjamin — Blind Creek Associate

Comment Type **E** *Comment Status* **A** *LATE - PMA*

the requirement "shall be satisfied" is going to be very hard to validate as no specification for "satisfaction" are given in this standard. I think the "shall" belongs in the previous sentence, and here we mean that the requirement is demonstrated by the frame error ration given.

SuggestedRemedy

Correctly state the required performance.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change "are received" to "shall be received"
Change "This specification shall be satisfied by" to "This specification can be verified by"

Commenter to consider submitting maintenance on Clause 55 and elsewhere where the same language exists

---

Cl **113** *SC* **113.5.4.3** *P* **171** *L* **21** # i-142

Moffitt, Bryan — CommScope, Inc.

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

"a 30 meter plug-terminated cabling that meets the requirements of 113.7" is off sense.

SuggestedRemedy

Change to: "a 30 meter plug-terminated cabling span that meets the requirements of 113.7,"

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.5.4.3** *P* **171** *L* **22** # i-94

RAN, ADEE — Intel Corporation

Comment Type **TR** *Comment Status* **A** *EMI test*

What does "remain over the ground reference plane" mean? does it mean component enclosures are grounded to the same connection? or should they all float to be isolated from ground connection?

SuggestedRemedy

Please reword to clarify.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.
Implemented in comment i-139

[Editor's note added after comment resolution was complete:
the resolution to comment i-139 was:

Change to "All components that are exposed to the induced fields should remain over the ground reference plane."

]

Cl **113** *SC* **113.5.4.3** *P* **171** *L* **22** # i-139

Moffitt, Bryan — CommScope, Inc.

Comment Type **T** *Comment Status* **A** *EMI test*

The sentence "All components in the test remain over the ground reference plane." is not true and should be deleted or modified to match the test in the Annex.

SuggestedRemedy

Delete or could be corrected, such as: Components that are exposed to the induced fields remain over a ground reference plane.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change to "All components that are exposed to the induced fields should remain over the ground reference plane."

Cl **113** *SC* **113.5.4.3** *P* **171** *L* **25** # i-140
Moffitt, Bryan CommScope, Inc.

Comment Type **T** *Comment Status* **D** *EMI test*

6dBm should be verified against more recent ad-hoc test data

SuggestedRemedy

review test results and change if necessary

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Additional test data will be reviewed if provided.

Cl **113** *SC* **113.5.4.3** *P* **171** *L* **32** # i-118
Donahue, Curtis

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

Change "6dBm" to "6 dBm".

SuggestedRemedy

See comment (add space).

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.5.4.3** *P* **171** *L* **32** # i-141
Moffitt, Bryan CommScope, Inc.

Comment Type **E** *Comment Status* **D** *EMI test*

This note has created several ambiguous issues: The 10% refers to a calibration procedure of the Annex (113A.3) that is not necesarily carried into the actual Annex test (113A.4) where it only says "impairment as specified". It is clearly identified in the annex as optional. There is no good reason to drag the 10% statement into the main document.

SuggestedRemedy

It should be recognized that 10% in any interpretation is a small deviation by conventional EMC methods and since it was not clearly defined, delete the note.

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Text was added to clear up a previous ambiguity flagged in comments.

Cl **113** *SC* **113.5.4.4** *P* **171** *L* **40** # i-143
Moffitt, Bryan CommScope, Inc.

Comment Type **E** *Comment Status* **A** *EMI test*

injected into each MDI inputs (Should be a singular sense?)

SuggestedRemedy

Change to: injected into each MDI input

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.5.4.5** *P* **172** *L* **38** # i-95
RAN, ADEE Intel Corporation

Comment Type **T** *Comment Status* **A** *Short reach mode*

Requirements in short reach mode do not exclude operation with longer cables (as specified in 113.5.4.1). It can be interpreted as if short reach mode only adds another set of requirements.

I assume the intent is that in short reach mode only the shorter reach link segment requirements are in effect.

SuggestedRemedy

State in 113.5.4.1 that the requirements in that subclause hold only when not in short reach mode.

Alternatively, state in 113.5.4.5 that in short reach mode the requirements of 113.5.4.1 do not hold.

Consider merging these two subclauses.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Add to 113.5.4.5, (at end).
When operating in short reach mode, only operation over the direct attach link segment specified in 113.7.4 is required.

Cl **113** *SC* **113.7.1** *P* **178** *L* **23** # i-10

Maguire, Valerie — The Siemon Company

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

Recognize that up to 30m, 2-connector category 7A channels, meeting the additional specifications described in ISO/IEC TR 11801-9905, will support 25GBASE-T.

SuggestedRemedy

Refer to page 3 of http://www.ieee802.org/3/bq/public/nov15/maguire_3bq_01a_1115.pdf to see proposed changes with revision marks.

Response *Response Status* **U**

REJECT.
No consensus to change the draft.

Straw Poll:
I support the commenter's proposed resolution (including both pages 3 & 4 of the referenced file) with editorial license to align with more recent parallel changes to the draft (e.g., 'star topology' language).
Y:8
N:10
A: 9

Straw Poll:
I support rejecting this comment
Y: 14
N: 9
A: 3

The editor asked whether there were any additional proposals to resolve the comment - there were none. The editor then asked whether there were any who believed there would be proposals after the lunch break or at this meeting - there were none.

Cl **113** *SC* **113.7.1** *P* **178** *L* **25** # i-109

Rossbach, Martin — Nexans Canada Inc.

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

Add Class FA for 25GBASE-T Cabling Types

SuggestedRemedy

use the following text for 113.7.1 "The cabling system used to support 40GBASE-T requires 4-pair balanced cabling with a nominal impedance of 100 Ohm listed in Table 113-21. The cabling system used to support 25GBASE-T requires 4-pair balanced cabling with a nominal impedance of 100 Ohm listed in Table 113-22. Operation on other classes of cabling may be supported if the link segment meets the requirements of 113.7.
Additionally:
a) 40GBASE-T uses balanced cabling listed in Table 113-21-- in a star topology to connect PHY entities.
b) 40GBASE-T is an application of the balanced cabling listed in Table 113-21-- with the additional transmission requirements specified in this subclause.
c) 25GBASE-T uses balanced cabling listed in Table 113-22-- in a star topology to connect PHY entities.
d) 25GBASE-T is an application of the balanced cabling listed in Table 113-21-- with the additional transmission requirements specified in this subclause. "

Response *Response Status* **U**

REJECT.
No consensus to make this change to the draft. (see comments i-10 and i-11)

[Editor's note added after comment resolution was complete:
the resolution to comment i-10 was:
No consensus to change the draft.

Straw Poll:
I support the commenter's proposed resolution (including both pages 3 & 4 of the referenced file) with editorial license to align with more recent parallel changes to the draft (e.g., 'star topology' language).
Y:8
N:10
A: 9

Straw Poll:
I support rejecting this comment
Y: 14
N: 9
A: 3

The editor asked whether there were any additional proposals to resolve the comment - there were none. The editor then asked whether there were any who believed there would be proposals after the lunch break or at this meeting - there were none.

the resolution to comment i-11 was:

No consensus to make this change to the draft

Straw Poll:
I support the commenter's proposed resolution (including both pages 3 & 4 of the referenced file) with editorial license to align with more recent parallel changes to the draft (e.g., 'star topology' language).
Y:7
N:8
A:9

Straw Poll:
I support rejecting this comment
Y: 10
N: 7
A: 7
]

Cl **113** *SC* **113.7.1** *P* **178** *L* **25** # i-108

Rossbach, Martin — Nexans Canada Inc.

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

Chapter 113.1.1 introduces Scaling factor for PCS, PMA and MDI to be 0.625 of 3200MBaud. For Cabling we need the Scaling factor to be 0.5 as we start with 2000MHz upper frequency. Redefine Scaling factor for 25GBASE-T = S = 0.5

SuggestedRemedy

Add text to 113.7.1 "For Cabling system characteristics for 25GBASE-T described in this Clause 113, the Scaling parameter S =0.5 is used."

Response *Response Status* **C**

REJECT.
No consensus to change.

Straw Poll:
I support the commenter's suggested remedy with editorial license:
Y: 6
N: 16
A: 8

Straw Poll:
I support the commenter's suggested remedy with editorial license and the scaling factor of 0.6:
Y: 7
N: 15
A: 6

Motion #6
Move to reject this comment because 25% bandwidth above Nyquist is required for BASE-T, except 2.5GBASE-T.
M: Valerie Maguire
S: Martin Rossbach
Y: 6
N: 13
A: 8
MOTION FAILS (Technical >= 75%)

Motion 7:
Reject the comment as there is no consensus to change the current draft based on this comment.
M: Chris Diminico
S: Peter Jones
Y: 18
N: 6
A: 2
MOTION PASSES (Technical >= 75%)

Cl **113** *SC* **113.7.1** *P* **178** *L* **33** # i-131

Thompson, Geoffrey GraCaSI S.A.

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

The phrase "in a star topology" refers to equipment which is out of scope for 802.3 networks using link segments. It would require the involvement of 802.1 bridges or routers. There is no star topology involving purely 802.3 equipment.

SuggestedRemedy

Remove the phrase "in a star topology" from the sentence. It is not necessary and is technically incorrect.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.7.2** *P* **178** *L* **38** # i-137

Schicketanz, Dieter Reutlingen Universty

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

Sreens are mentioned everywere, but the main qualifiere is missing in the link specification. It would add the possibility to match the link specifications to the local envinronment.

SuggestedRemedy

Add coupling attenuation depending on local envinronment after suubclause 113.7.3.2.1. Proposal to be given in Atlanta it does not fit here. (from 11801)

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Coupling attenuation is specified in the referenced cabling standards and is not necessary to include as a link segment parameter as not directly related to PHY performance.

Cl **113** *SC* **113.7.2** *P* **178** *L* **39** # i-110

Rossbach, Martin Nexans Canada Inc.

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

Add Table 113-22 for 25GBASE-T Cabling Types including Class FA

SuggestedRemedy

Link segment transmission parameters
A link segment consisting of up to 30 m of cabling that meets the transmission parameters of this subclause provides a reliable medium. The transmission parameters of the link segment include insertion loss, delay parameters, nominal impedance, NEXT loss, ACRF, and return loss. In addition, the requirements for the alien crosstalk coupled "between" link segments is specified.
Table 113-21 lists the supported cabling types and distances for 40GBASE-T and Table 113-22 lists the supported cabling types and distances for 25GBASE-T.
Table 113-21 40GBASE-T Cabling types and distances
Cabling Supported link segment distances Cabling references
ISO/IEC Class I / Class II 30 m ISO/IEC 11801-1 Edition 3
Category 8 30 m ANSI/TIA-568-C.2-1
Table 113-22 25GBASE-T Cabling types and distances
Cabling Supported link segment distances Cabling references
ISO/IEC Class I / Class II 30 m ISO/IEC 11801-1 Edition 3
Category 8 30 m ANSI/TIA-568-C.2-1
CLASS FA 30 m ISO/IEC 11801-1 Edition 3 up to 30m / ISO/IEC TR 11801-9905

Response *Response Status* **U**

REJECT.
No consensus to make this change to the draft. See comment i-10 and i-11

[Editor's note added after comment resolution was complete:
the resolution to comment i-10 was:
No consensus to change the draft.

Straw Poll:
I support the commenter's proposed resolution (including both pages 3 & 4 of the referenced file) with editorial license to align with more recent parallel changes to the draft (e.g., 'star topology' language).
Y:8
N:10
A: 9

Straw Poll:
I support rejecting this comment
Y: 14
N: 9
A: 3

The editor asked whether there were any additional proposals to resolve the comment - there were none. The editor then asked whether there were any who believed there would

be proposals after the lunch break or at this meeting - there were none.

the resolution to comment i-11 was:
No consensus to make this change to the draft

Straw Poll:
I support the commenter's proposed resolution (including both pages 3 & 4 of the referenced file) with editorial license to align with more recent parallel changes to the draft (e.g., 'star topology' language).
Y:7
N:8
A:9

Straw Poll:
I support rejecting this comment
Y: 10
N: 7
A: 7
]

Cl **113** *SC* **113.7.2** *P* **178** *L* **42** # i-134

Schicketanz, Dieter — Reutlingen Universty

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

In 802.3 bz the lower 2.5 G is specified to 100 MHz, 5G to 250 MHz. Scaling this frequencies up to 25 G and 40 G the frwuencies would be 1000 MHz and 2000 MHz

SuggestedRemedy

To be in line with 802.3bz change 0.625 to 0.5 in the link formulas , it should be sufficient to do it in 113.7.2 once

Response *Response Status* **C**

REJECT.
No consensus to change the draft. See comment i-108

[Editor's note added after comment resolution was complete:
the resolution to comment i-108 was:
No consensus to change.

Straw Poll:
I support the commenter's suggested remedy with editorial license:
Y: 6
N: 16
A: 8

Straw Poll:
I support the commenter's suggested remedy with editorial license and the scaling factor of 0.6:
Y: 7
N: 15
A: 6

Motion #6
Move to reject this comment because 25% bandwidth above Nyquist is required for BASE-T, except 2.5GBASE-T.
M: Valerie Maguire
S: Martin Rossbach
Y: 6
N: 13
A: 8
MOTION FAILS (Technical >= 75%)

Motion 7:
Reject the comment as there is no consensus to change the current draft based on this comment.
M: Chris Diminico
S: Peter Jones
Y: 18
N: 6

A: 2
MOTION PASSES (Technical >= 75%)
]

Cl **113** *SC* **113.7.2** *P* **178** *L* **44** # i-11

Maguire, Valerie — The Siemon Company

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

Recognize that up to 30m, 2-connector category 7A channels, meeting the additional specifications described in ISO/IEC TR 11801-9905, will support 25GBASE-T.

SuggestedRemedy

Refer to page 4 of http://www.ieee802.org/3/bq/public/nov15/maguire_3bq_01a_1115.pdf to see proposed changes with revision marks.

Response *Response Status* **U**

REJECT.
No consensus to make this change to the draft

Straw Poll:
I support the commenter's proposed resolution (including both pages 3 & 4 of the referenced file) with editorial license to align with more recent parallel changes to the draft (e.g., 'star topology' language).
Y:7
N:8
A:9

Straw Poll:
I support rejecting this comment
Y: 10
N: 7
A: 7

Cl **113** *SC* **113.7.2** *P* **178** *L* **47** # i-62

Hajduczenia, Marek — Bright House Network

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

Incorrect table format for Table 113-21

SuggestedRemedy

Please apply proper style (and fix offending line thickness)
The same observation applies to Table 113-22.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.7.2** *P* **178** *L* **52** # i-157

Hess, David — CORD DATA

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

Recognize Category 7A balanced cabling capacity to support 25GBASE-T, as it is already defined in 802.3, and as it is already used in Class FA cabling listed among 10GBASE-T supported cabling types.
"1.4.124 Category 7A balanced cabling: Balanced 100 U cables and associated connecting hardware whose transmission characteristics are specified up to 1,000 MHz (i.e., cabling components meet the performance specified in ISO/IEC 11801:2002 Amendment 2). In addition to the requirements outlined in ISO/IEC 11801:2002 Amendment 2, IEEE 802.3 Clause 14, Clause 23, Clause 25, Clause 40, and Clause 55 specify additional requirements for this cabling when used with 10BASE-T 100BASE-T and 10GBASE-T "

SuggestedRemedy

Insert footnote reference "a" within Table 113-21- Cabling types and distances, to the end of column 1, row 2, "ISO/IEC Class I / Class II"
Place the note below Table 113-21- Cabling types and distances:
"Category 7A balanced cabling, defined in clause 1.4.124, which is used in Class FA cabling, which is listed in Table 55-17 among the 10GBASE-T supported cabling types, supports 25GBASE-T for a link segment distance of 30 m; Category 7A balanced cabling link segment characteristics are verified according to this subclause (113.7) over the frequency range of 1 MHz to 1000 MHz "

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

PROPOSED REJECT

Content of suggested remedy similar to proposals in rejected comment#36 against D2.3 with the response " no consensus to change the draft".

For committee discussion.
Commenter's proposed revised suggested remedy:

Insert footnote reference "a" within Table 113-21- Cabling types and distances, to the end of column 1, row 2, "ISO/IEC Class I / Class II"
Place the note below Table 113-21- Cabling types and distances:
"Category 7A balanced cabling, defined in clause 1.4.124, which is used in Class FA cabling, and supports 25GBASE-T for a link segment distance of 30 m, subject to the additional requirements of ISO/IEC TR11801-9905; Category 7A balanced cabling link segment characteristics are verified according to this subclause (113.7) over the frequency range of 1 MHz to 1250 MHz "

Straw Poll:
I support inserting the above revised suggested remedy:
Y: 9

N: 9
A: 8

Cl **113** *SC* **113.7.2.1** *P* **182** *L* **6** # i-135

Schicketanz, Dieter Reutlingen Universty

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

Formula 113-13 contains an error

SuggestedRemedy

The last f^2 should multiply only the 7 of 10^-7 not (10^-7)xf^2

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

See formula and table results given in diminico_3bq_01_0914.pdf consistent with equation 113-13.

Cl **113** *SC* **113.7.2.3** *P* **179** *L* **35** # i-111

Rossbach, Martin Nexans Canada Inc.

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

Merge lines for 1000<f<1250MHz and 1250<f<1600MHz. It is the same requirement.

SuggestedRemedy

Delete line 35. Change Formula to show a 8dB requirement from 1000MHz to 1600MHz (for 40GBASE-T)

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

The equation addresses both 25GBASE-T and 40GBASE-T. 25GBASE-T is not specified >1250 MHz.

Cl **113** *SC* **113.7.2.3** *P* **179** *L* **44** # i-96

RAN, ADEE Intel Corporation

Comment Type **G** *Comment Status* **A** *EZ*

Editor's note refers to an equation number different from the equation that precedes it. Also, it state that resolution is expected in September 2015; is there a resolution?

SuggestedRemedy

Either correct the number or move the note near the equation. Update the expected date if the comment is still relevant.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Note deleted by comment i-100

[Editor's note added after comment resolution was complete:
the resolution to comment i-100 was:
Delete editor's note
]

Cl **113** *SC* **113.7.2.3** *P* **179** *L* **44** # i-63

Hajduczenia, Marek Bright House Network

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

misplaced Editorial note.

SuggestedRemedy

Either fix reference from Equation 113-27 to Equation 113-14 (where the note is located) or move the note to location under said Equation 113-27.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Note deleted by comment i-100
[Editor's note added after comment resolution was complete:
the resolution to comment i-100 was:
Delete editor's note
]

Cl **113** *SC* **113.7.2.3** *P* **179** *L* **45** # i-100

Zimmerman, George Aquantia, and CommS

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

Editor's note on ISO Return Loss is no longer relevant

SuggestedRemedy

Delete editor's note

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.7.2.4** *P* **179** *L* **50** # i-119

Donahue, Curtis

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

In this paragraph, and repeated in some of the following subclauses, spells out the acronym of ACRF as "attenuation to crosstalk ratio, far-end", but in 1.5 Definitions it is defined as "attenuation to crosstalk ratio - far end".

SuggestedRemedy

Make the acronym definition and text consistant. The easiest solution would be to change the definition in 1.5 to "attenuation to crosstalk ratio, far-end".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change the definition in 1.5 to "attenuation to crosstalk ratio, far-end.

Cl **113** *SC* **113.7.4.2** *P* **186** *L* **21** # i-136

Schicketanz, Dieter Reutlingen Universty

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

While the link formulas reference cabling standards were reference measurements and set ups are mentioned clause 113.7.4 direct attach shows limits witout saying how to measure them. Therefore it is difficult to compare both but the formulas should look at least similar. Rl from 1600 MHz looks different.

SuggestedRemedy

The two sets are difficult to compare but at least match RL from 1600 MHz onwards to the link performance.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change Equation 113-33 on page 186 line 37 from 8 dB from 1000 MHz to 2000xS MHz to align with Equation 113-14 on page 179 lines 35 to 38 (values above 1000 MHz).

Cl **113** *SC* **113.7.4.3.1** *P* **187** *L* **1** # i-144

Moffitt, Bryan CommScope, Inc.

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

Table format is inconsistent with other specification equations

SuggestedRemedy

alter to equation format

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Implement suggested remedy if possible.

Cl **113** *SC* **113.7.4.3.2** *P* **187** *L* **24** # i-145

Moffitt, Bryan CommScope, Inc.

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

Table format is inconsistent with other specification equations

SuggestedRemedy

alter to equation format

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Implement suggested remedy if possible.

Cl **113** *SC* **113.7.4.3.3** *P* **187** *L* **45** # i-147

Moffitt, Bryan CommScope, Inc.

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

identical to Equation 113-21

SuggestedRemedy

could delete and add reference

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
P187 L45, delete "as follows" change Equation (113–34) to Equation (113-21).
Delete Equation (113–34).

Cl **113** *SC* **113.7.4.3.4** *P* **188** *L* **9** # i-146

Moffitt, Bryan CommScope, Inc.

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

No need to repeat this odd voltage calculation

SuggestedRemedy

Delete - already overdone at 113.7.2.4.4

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. At the end of the first paragraph 113.7.4.3.4 add
FEXT loss is defined in Equation (113–22) ACRF is defined in Equation (113–23).

Delete Equation (113–34) and Equation (113–35).

Cl **113** *SC* **113.7.4.3.5** *P* **189** *L* **6** # i-148

Moffitt, Bryan CommScope, Inc.

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

identical to Equation 113-26

SuggestedRemedy

could delete and add reference

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
P189 L1, delete "as follows" change Equation (113–38) to Equation (113-26).
Delete Equation (113–38).

Cl **113** *SC* **113.7.4.3.9** *P* **190** *L* **8** # i-149

Moffitt, Bryan CommScope, Inc.

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

identical to Equation 113-27

SuggestedRemedy

could delete and add reference

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. P190 L1, delete "as follows" change Equation (113–40) to Equation (113-27).
Delete Equation (113–40).

Cl **113** *SC* **113.8** *P* *L* # i-129

Fritsche, Matthias HARTING Electronics

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

Category 7A cable/connectors
(Amendment 1 and 2 to ISO/IEC 11801, 2nd Ed.)
are not included

SuggestedRemedy

Class FA: link/channel up to 1000 MHz
using Category 7A cable/connectors
(Amendment 1 and 2 to ISO/IEC 11801, 2nd Ed.)
should be added

Response *Response Status* **C**

REJECT.
Commenter fails to provide sufficient information to include in the draft.

Cl **113** *SC* **113.8.1** *P* **192** *L* **8** # i-132

Schicketanz, Dieter — Reutlingen Universty

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

in Kanata 2014 when deciding on the MDI connector the motion for an "RJ45" failed.It passed later by saing it woud not preclude other options. This wording was not implemented just old wording used. In the Berlin meeting this was discussed but it was said it would be a technical change. To my knowlege implementing a motion is editorial and not a technical change. I personally was very disapointed about the treatment in Berlin.

SuggestedRemedy

Change the sentence to reflect the outcome of the motion that the one mentioned connector is not the only one possible.e.g:Start at linee 8: One option is an.....After-7-81replace "shall" with "to" My english is not sufficient to propose a good wording that would satisfy all.

Response *Response Status* **U**

REJECT.
No consensus to change the draft for this comment.

Commenter clarifies suggested remedy as:
Change P192 Line 8 to read:
"One option is using eight-pin connectors meeting the requirements of IEC 60603-7-51 with the improved characteristics and frequency extensions specified in IEC 60603-7-81 as the mechanical interface to the balanced cabling."

Straw poll:
I support the clarified suggested remedy for this comment i-132.
Y:9
N:12
A:6

Straw poll:
I support rejecting this comment:
Y:12
N: 8
A: 7

From the September 2014 Task Force meeting, Ottawa, ON, Canada meeting minutes (http://www.ieee802.org/3/bq/public/sep14/unconfirmed_minutes_3bq_0914.pdf)

The secretary & Editor noted that they understood the language of the motion not to preclude additional MDI's should they be offered in the future.

Commenter clarifies that he is requesting that the draft to be modified to include an alternative MDI.

Cl **113** *SC* **113.8.2.2** *P* **194** *L* # i-120

Donahue, Curtis

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

Change "Test- Mode 5" to "Test mode 5" to be consistant with other instances of "test mode" throughout the draft.

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT.

Cl **113A** *SC* **113A.2** *P* **213** *L* **31** # i-128

Donahue, Curtis

Comment Type **E** *Comment Status* **A** *EMI test*

There seems to be some differences in the described width of the center opening (rounding issues?). On pg 213 ln 31 it says " 9.525 mm (0.375 in)", but pg 214 ln 3 says "9.53 mm (0.375 in)". And lastly, figure 113A-2 on pg 215 uses "9.53".

SuggestedRemedy

Change the values to be consistant, either all should be "9.53" or all should be "9.525".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change all dimensions to 3 significant figures (change 9.525 mm references to 9.53 mm)

Cl **113A** *SC* **113A.2** *P* **216** *L* **1** # i-64

Hajduczenia, Marek — Bright House Network

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

inconsistent font size in Table 113A-1

SuggestedRemedy

Please apply proper style template and decrease font size for individual entry rows.

Response *Response Status* **C**

ACCEPT.

Cl **113A** *SC* **113A.3** *P* **216** *L* **44** # i-65

Hajduczenia, Marek — Bright House Network

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

There are a few editorial inconsistencies in text on page 216 and 217.
Lettered list uses "-" and "--" (em-dash) as separators without any consistency
The use of "<->" symbol is not really clear - if a link is intended, spell it out using "link between Port 1 and Port 2) or something similar.
There is, by definition, a non-breaking space between numeric value and unit, but there are multiple instances where space is missing, e.g., "A 30m, 4-pair 100 "

SuggestedRemedy

Fix the issues

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
ON PAGES 216 and 217:
Change em-dash to dash on:
P216 L50 (item c), P217 L14 (item e), P217 L16 (item f), P217 L22 (item g)

Change P217 L16: "cable used for the test" to "test cable"

Change <-> to "to" (to indicate link)
Insert nonbreaking space between "30" and "m" on P217 L14

Cl **113A** *SC* **113A.4** *P* **219** *L* **1** # i-156

Moffitt, Bryan — CommScope, Inc.

Comment Type **T** *Comment Status* **A** *EMI test*

"reduced to the minimum output level" does not ensure relief from transients. Fast switching to and from zero still can create strong transients.

SuggestedRemedy

Change to something like: The signal generator output transitions should be controlled to minimize any disruptive frequency switching transients.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change to "The signal generator output should be controlled between steps to minimize any frequency switching transients."

Cl **28** *SC* **28.3.1** *P* **27** *L* **8** # i-1

Anslow, Peter — Ciena Corporation

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

In the editing instruction "the first list" should be "in the first list", subclause numbers are not preceded by "subclause", and the location should be specified.

SuggestedRemedy

Change the editing instruction to: "Insert rows for 25Gig T and 40GigT in the first list in 28.3.1 below the row for 10GigT as follows:

Response *Response Status* **C**

ACCEPT.

Cl **28D** *SC* **28D.8** *P* **211** *L* **29** # i-127

Donahue, Curtis

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

Change " 25GBASE_T" to " 25GBASE-T".

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.2.1.2** *P* **29** *L* **41** # i-165

Law, David — Hewlett Packard Enter

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

Text needs updated based on the approval of IEEE Std 802.3bw last year and the likelihood that IEEE P802.3bq will be the third amendment to IEEE Std 802.3-2015.

SuggestedRemedy

Suggest that:

[1] The text '... (as modified by IEEE Std 802.3bw-201X, IEEE Std 802.3by-201X and TBD) ...' be changed to read '... (as modified by IEEE Std 802.3bw-201X and IEEE Std 802.3by-201X) ...'.
[2] The Editors note in the box on line 47 be deleted.

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.2.1.2** *P* **29** *L* **43** # i-2

Anslow, Peter — Ciena Corporation

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

IEEE Std 802.3bw has been approved by the SASB, so this should be "IEEE Std 802.3bw-2015"

SuggestedRemedy

Change all instances of "IEEE Std 802.3bw-201x" to "IEEE Std 802.3bw-2015" throughout the draft

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.2.1.3** *P* **30** *L* **3** # i-166

Law, David — Hewlett Packard Enter

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

Text needs updated based on the approval of IEEE Std 802.3bw last year and the likelihood that IEEE P802.3bq will be the third amendment to IEEE Std 802.3-2015.

SuggestedRemedy

Suggest that:

[1] The text '... (as modified by IEEE Std 802.3bw-201X, IEEE Std 802.3by-201X and TBD) ...' be changed to read '... (as modified by IEEE Std 802.3bw-201X and IEEE Std 802.3by-201X) ...'.
[2] The Editors note in the box on line 7 be deleted.

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.5.1.1.19** *P* **31** *L* **11** # i-169

Law, David — Hewlett Packard Enter

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

Suggest for clarity it should be stated that SNR operating margin is measured at the slicer input for MultiGBASE-T PMAs.

SuggestedRemedy

Suggest that the text '... for the <S>10GBASE-T </S>PMA.' be changed to read '... for the <S>10GBASE-T </S><U>MultiGBASE-T</U> PMA.' should be changed here and in subclause 30.5.1.1.20 'aSNROpMarginChnlB' (line 26), in subclause 30.5.1.1.21 'aSNROpMarginChnlC' (line 41) and subclause 30.5.1.1.22 'aSNROpMarginChnlD'.

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.5.1.1.2** *P* **30** *L* **22** # i-167

Law, David — Hewlett Packard Enter

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

Text needs updated based on the approval of IEEE Std 802.3bw last year and the likelihood that IEEE P802.3bq will be the third amendment to IEEE Std 802.3-2015.

SuggestedRemedy

Suggest that:

[1] The text '... (as modified by IEEE Std 802.3bw-201X, IEEE Std 802.3by-201X and TBD) ...' be changed to read '... (as modified by IEEE Std 802.3bw-201X and IEEE Std 802.3by-201X) ...'.
[2] The Editors note in the box on line 28 be deleted.

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.5.1.1.25** *P* **32** *L* **35** # i-170

Law, David — Hewlett Packard Enter

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

There is no 'PHY event counter' defined in IEEE Std 802.3-2015 subclause 55.4.5.1 'State diagram variables' or subclause 113.4.5.4 'Counters'. Instead I think the reference should be to fr_tx_counter defined in IEEE Std 802.3-2015 subclause 55.4.5.4 'Counters' and subclause 113.4.5.4 'Counters'.

In addition, while the size of the counter isn't explicitly stated in the its definition in IEEE Std 802.3-2015 subclause 55.4.5.4 or subclause 113.4.5.4, in both cases it is stated that it 'is reflected in MDIO register 1.147.10:6 specified in 45.2.1.79.2' which implies it is a five bit counter.

Since the aLDFastRetrainCount attribute is defined as a counter with a maximum increment rate of 1000 counts per second, it will have to be considerable bigger than five bits to allow a reasonable polling speed through a management protocol without loss of information.

Based on this aLDFastRetrainCount can be derived by the local management agent from fr_tx_counter, or from the LD fast retrain count register, but can't be mapped to them directly.

A similar set of issues exist for 30.5.1.1.25 aLPFastRetrainCount.

SuggestedRemedy

Suggest that:

[1] In subclause 30.5.1.1.24 the text 'The indication reflects the state of the PHY event counter (see 55.4.5.1 and 113.4.5.4)' be changed to read 'This counter can be derived from fr_tx_counter (see 55.4.5.4 and 113.4.5.4).'.
[2] In subclause 30.5.1.1.24 the text '... then this attribute maps to the LD fast retrain count register (see 45.2.1.79.2).;' be changed to read '... then this attribute can be derived from the LD fast retrain count register (see 45.2.1.79.2).;'.
[3] In subclause 30.5.1.1.25 the text 'The indication reflects the state of the PHY event counter (see 55.4.5.1 and 113.4.5.4)' be changed to read 'This counter can be derived from fr_rx_counter (see 55.4.5.4 and 113.4.5.4).'.
[4] In subclause 30.5.1.1.25 the text '... then this attribute maps to the LP fast retrain count register (see 45.2.1.79.1).;' be changed to read '... then this attribute can be derived from the LP fast retrain count register (see 45.2.1.79.1).;'

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.5.1.1.4** *P* **30** *L* # i-168

Law, David — Hewlett Packard Enter

Comment Type **TR** *Comment Status* **A** *BY alignment*

Based on comment #217 on draft D2.0 of IEEE P802.3by <http://www.ieee802.org/3/by/public/comments/8023by_D20_comment_final_responses_by_clause.pdf#Page=8> being accepted, the IEEE P802.3by draft was changed to modify the 10Gb/s text in paragraph 8 rather than modifying the 40Gb/s and 100Gb/s text in paragraph 6. The text in this draft has however not been modified to reflect this. Regardless, on the assumption that IEEE P802.3by will be Amendment 2 and IEEE P802.3bq will be Amendment 3, the text modification provided in IEEE P802.3by to the subclause 30.5.1.1.4 aMediaAvailable behaviour will provide support for all 25 Gb/s PHYs including 25GBASE-T. And further, the existing IEEE Std 802.3-2015 subclause 30.5.1.1.4 aMediaAvailable behaviour already supporting all 40 Gb/s PHYs. Based on this no further modification of the subclause 30.5.1.1.4 aMediaAvailable behaviour description is required in IEEE P802.3bq and hence this subclause should be deleted from the IEEE P802.3bq Clause 30 changes.

SuggestedRemedy

Suggest that the subclause 30.5.1.1.4 aMediaAvailable should be deleted from the IEEE P802.3bq Clause 30 changes.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Implemented by i-20
Align with IEEE Std 802.3by, see comments i-20 and i-74, inserting Link Interruption and aligning with IEEE P802.3by draft by also changing paragraph 8.

[Editor's note added after comment resolution was complete:
the resolution to comment i-20 was:
Change page 30 line 49 to match IEEE Std 802.3-2015 (should be 40Gb/s)

Move editor's note after the sixth paragraph, and before the eight.

Add editing instruction to (also) change eighth paragraph, as inserted by IEEE Std 802.3by-201x, to add Link Interruption, as described in comment i-74.

The resolution of comment i-74 was:
Insert change to eighth paragraph in proposed response, but retain sixth paragraph, making it consistent with IEEE Std 802.3-2015 (applies to 40Gb/s) and retaining the insert of Link Interruption.
Move editor's note after the sixth paragraph, and before the eight.
]

Cl **30** *SC* **30.5.1.1.4** *P* **30** *L* **43** # i-74

Marris, Arthur — Cadence Design Syst

Comment Type **TR** *Comment Status* **A** *BY alignment*

Make consistent with modifications in 802.3by

SuggestedRemedy

Delete editors note.

Make the change to the eighth paragraph and not the sixth so it reads:

For 10 Gb/s and 25 Gb/s the enumerations map to value of the link_fault variable within the Link Fault Signaling state diagram (Figure 46-11) as follows: the values OK and Link Interruption map to the enumeration "available", the value Local Fault maps to the enumeration "not available" and the value Remote Fault maps to the enumeration "remote fault".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Insert change to eighth paragraph in proposed response, but retain sixth paragraph, making it consistent with IEEE Std 802.3-2015 (applies to 40Gb/s) and retaining the insert of Link Interruption.
Move editor's note after the sixth paragraph, and before the eight.
Implemented in comment i-20

Cl **30** *SC* **30.5.1.1.4** *P* **30** *L* **49** # i-20

RAN, ADEE — Intel Corporation

Comment Type **T** *Comment Status* **A** *BY alignment*

The text that appears here is not based on 802.3by. as of D3.0 of 802.3by the sixth paragraph of "BEHAVIOUR DEFINED AS" is not changed compared to the 802.3-2015 revision. 802.3by only changes the eighth paragraph.

The original sixth paragraph refers to "For 40 Gb/s and 100 Gb/s", not to "For 25 Gb/s or greater".

It seems to make sense to reference 25 Gb/s in the sixth paragraph instead, since most of the eighth paragraph does not apply to 25 Gb/s, but that should be coordinated with 802.3by.

SuggestedRemedy

Unless 802.3by changes its draft to fit 802.3bq D3.0, make the addition of "and Link Interruption" in both the sixth and the eighth paragraphs. Change the editing instruction accordingly.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Below provides detail to implement commenters suggested remedy:

Change page 30 line 49 to match IEEE Std 802.3-2015 (should be 40Gb/s)

Move editor's note after the sixth paragraph, and before the eight.

Add editing instruction to (also) change eighth paragraph, as inserted by IEEE Std 802.3by-201x, to add Link Interruption, as described in comment i-74.

[Editor's note added after comment resolution was complete:
The resolution to comment i-74 was:
Insert change to eighth paragraph in proposed response, but retain sixth paragraph, making it consistent with IEEE Std 802.3-2015 (applies to 40Gb/s) and retaining the insert of Link Interruption.
Move editor's note after the sixth paragraph, and before the eight.
]

Cl **30** *SC* **30.6.1.1.5** *P* **33** *L* **9** # i-171

Law, David — Hewlett Packard Enter

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

Text needs updated based on the approval of IEEE Std 802.3bw last year and the likelihood that IEEE P802.3bq will be the third amendment to IEEE Std 802.3-2015.

SuggestedRemedy

Suggest that:

[1] The text '... (as modified by IEEE Std 802.3bw-201X, IEEE Std 802.3by-201X and TBD) ...' be changed to read '... (as modified by IEEE Std 802.3bw-201X and IEEE Std 802.3by-201X) ...'.
[2] The Editors note in the box on line 13 be deleted.

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.12.9a** *P* **37** *L* **41** # i-21

RAN, ADEE — Intel Corporation

Comment Type **E** *Comment Status* **R** *PMA/PMD*

Text here says "operate as a 40GBASE-T PMA type". All other bits in this register use "PMA/PMD type". This is also the text used in 45.2.10.9 for 10GBASE-T.

Also applies to 45.2.1.14b.a 25GBASE-T ability.

SuggestedRemedy

In 45.2.1.12.9a, change "40GBASE-T PMA type" to "40GBASE-T PMA/PMD type", twice.

In 45.2.1.14b.a, change "25GBASE-T PMA type" to "25GBASE-T PMA/PMD type", twice.

Response *Response Status* **C**

REJECT.
The BASE-T PHYs, like 10GBASE-T, only have PMA, they have no PMD. The selection table 45-7 and all sections other than 45.2.10 for 10GBASE-T only has PMA, but the usage in 45.2.10.9 is inconsistent (and should be fixed by maintenance).

Language is consistent with existing 802.3 usage.

Cl **45** *SC* **45.2.1.14b** *P* **38** *L* **3** # i-13

Marris, Arthur — Cadence Design Syst

Comment Type **E** *Comment Status* **A** *BY alignment*

Editorial instruction should reference Table 45-17b

SuggestedRemedy

Change "Table 45-17c" to "Table 45-17b"

Also change "45.2.1.14c.1" to "45.2.1.14b.1" on line 21

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.14b.a** *P* **38** *L* **21** # i-4

Anslow, Peter — Ciena Corporation

Comment Type **E** *Comment Status* **A** *BY alignment*

"... before 45.2.1.14c.1 ..." should be "... before 45.2.1.14b.1 ..."

SuggestedRemedy

Change "... before 45.2.1.14c.1 ..." to "... before 45.2.1.14b.1 ..."

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.14b.a** *P* **38** *L* **21** # i-22

RAN, ADEE — Intel Corporation

Comment Type **E** *Comment Status* **A** *BY alignment*

802.3by does not have 45.2.1.14c.1. This reference should be to 45.2.1.14b.1.

SuggestedRemedy

Change "before 45.2.1.14c.1" to "before 45.2.1.14b.1".

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.6** *P* **36** *L* **17** # i-12

Marris, Arthur — Cadence Design Syst

Comment Type **TR** *Comment Status* **A** *BY alignment*

Editing instruction for 25GBASE-T PMA is type selection incorrect. None of IEEE Std 802.3bw-201X, IEEE Std 802.3bn-201X, or IEEE Std 802.3by-201X have an entry for: "1101xx = reserved for future use"

SuggestedRemedy

802,3by has:
"111011 = reserved"

Suggest adding editorial instruction to change this to:
"111011 = 25GBASE-T PMA"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
(802.3bn has the 1101xx entry, but will probably follow 802.3bq)
Commenter's suggested remedy would change the 802.3 Chief Editor's proposed allocation of 110111 to 25GBASE-T PMA.

Proposed remedy - retain exist allocation of 110111, and make edits consistent with 802.3bw and 802.3by, by:

1. Change editor's note to delete reference to 802.3bn, but still reflect 802.3bw and 802.3by

2. Retain existing rows "110111 = 25GBASE-T PMA" and "110110 = reserved for future use"

3. Below that, insert new row "11010x = reserved for future use"

4. Below that, replace edit changing row "1101xx"... to "11010x"… by row changing "110xxx"… to "1100xx"... (with appropriate underline and strikeouts)

[Editor's note - added following comment resolution - general comments aligning with BY and 802.3-2015, support changing these to simply "reserved", as per comment i-3. The edits in 802.3bw are reversed in 802.3by.]

Cl **45** *SC* **45.2.1.6** *P* **36** *L* **18** # i-3

Anslow, Peter — Ciena Corporation

Comment Type **E** *Comment Status* **R** *BY alignment*

The reserved combinations for bits 1.7.5:0 are labelled "reserved", not "reserved for future use"

SuggestedRemedy

Change "reserved for future use" to "reserved" (3 instances)

Response *Response Status* **C**

REJECT.
802.3bw draft 3.3 shows these as 'reserved for future use'

[Editor's note - added following comment resolution - see comment i-12 - in accordance with general comments aligning with 802.3by and 802.3-2015, support the implementation of comment i-12 as changing these to "reserved", as per comment i-3. The edits in 802.3bw are reversed in 802.3by.]

Cl **45** *SC* **45.2.1.62** *P* **38** *L* **31** # i-23

RAN, ADEE — Intel Corporation

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

The letter "G" seems smaller than others in "MultiGBASE-T". This occurs multiple times from this point and forth.

SuggestedRemedy

Correct font sizes.

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.62.1** *P* **38** *L* **37** # i-101

Zimmerman, George — Aquantia, and CommS

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

Reference to 10GBASE-T clause 55 has dropped out of the text without even change marks

SuggestedRemedy

Change "When read as a one, bit 1.129.0 indicates that the startup protocol defined in 113.4.2.5 has been completed" to: "When read as a one, bit 1.129.0 indicates that the startup protocol defined in 55.4.2.5 (for 10GBASE-T) or 113.4.2.5 (for 25G/45GBASE-T) has been completed," and show appropriate underlining for "(for 10GBASE-T) or 113.4.2.5 (for 25G/45GBASE-T)".

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.64.2** *P* **39** *L* **39** # i-25

RAN, ADEE — Intel Corporation

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

Since this bit is read/write, I assume writing it should control the short reach mode. The way the text is written suggests that it only indicates the short reach mode.

Is there something else that can put the PHY in/out of short reach mode?

SuggestedRemedy

Change "If bit 1.131.0 is a one, the PHY is in short reach mode" to "Setting this bit to a one puts the PHY in short reach mode". Change similarly for a value of zero.

If something else within the standard can cause setting short reach mode on/off, please indicate that.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Existing 10GBASE-T systems might be affected by the change suggested.

Insert at the end of the paragraph:
"For 25GBASE-T and 40GBASE-T, setting this bit to a one puts the PHY in short reach mode, and setting this bit to a zero puts the PHY into normal (non-short reach) mode.

Cl **45** *SC* **45.2.1.64.2** *P* **39** *L* **40** # i-24

RAN, ADEE — Intel Corporation

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

"Normal mode" is defined in clause 55 as the mode of operation that enables data transfer, as opposed to training mode. This is not the opposite of "short reach mode". Therefore, setting bit 1.131.0 to zero does not necessarily make the PHY operate in normal mode; it only disables short reach mode.

SuggestedRemedy

Change "If bit 1.131.0 is a zero the PHY is operating in normal mode" to "If bit 1.131.0 is a zero, the PHY is not in short reach mode".

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.65.1** *P* **40** *L* **1** # i-5

Anslow, Peter — Ciena Corporation

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

In "Change text of clauses 45.2.1.65.1 and 45.2.1.65.2 ...", 45.2.1.65.1 and 45.2.1.65.2 are not clauses.

SuggestedRemedy

Delete the word "clauses"

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.78** *P* **41** *L* **51** # i-26

RAN, ADEE — Intel Corporation

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

Missing space between value and units.

Missing period at the end of this paragraph.

SuggestedRemedy

Change "1.25ns" to "1.25 ns".
Change "2.5ns" to "2.5 ns".

Add period after the last word.

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.79.1** *P* **42** *L* **20** # i-172

Law, David — Hewlett Packard Enter

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

The fr_rx_counter is defined in subclause 55.4.5.4 'Counters' of IEEE Std 802.3-2015.

SuggestedRemedy

Suggest that the text '... fr_rx_counter as defined in 55.4.5.1 for 10GBASE-T ...' should be changed to read '... fr_rx_counter as defined in 55.4.5.4 for 10GBASE-T ...'.

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.79.2** *P* **42** *L* **29** # i-173

Law, David — Hewlett Packard Enter

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

The fr_tx_counter is defined in subclause 55.4.5.4 'Counters' of IEEE Std 802.3-2015.

SuggestedRemedy

Suggest that the text '... fr_tx_counter as defined in 55.4.5.1 for 10GBASE-T ...' should be changed to read '... fr_tx_counter as defined in 55.4.5.4 for 10GBASE-T ...'.

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3** *P* **42** *L* **44** # i-7

Anslow, Peter — Ciena Corporation

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

Subclause 45.2.3.9a has been added for EEE control and capability 2 (Register 3.21), but there is no change to Table 45-119 for this new register

SuggestedRemedy

Add a row for register 3.21 and show appropriate changes to the reserved registers.

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.1.2** *P* **43** *L* **4** # i-104

Zimmerman, George — Aquantia, and CommS

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

Need to specify how the speed of the loopback is selected

SuggestedRemedy

Insert: "The speed of the loopback is selected by the PCS control 1 (Register 3.0) defined in 45.2.3.1." after "return it on the receive path." (see 802.3bz draft 1.2 if further guidance is required)

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.6** *P* **43** *L* **40** # i-14

Marris, Arthur — Cadence Design Syst

Comment Type **T** *Comment Status* **A** *BY alignment*

There is a comment against 802.3by draft 3.0 to amke the row:
"1 1 0 = reserved"

SuggestedRemedy

For the "0 1 1 0" entry remove the underlining from the last three bits and make the editing instruction indicate a change from:
"1 1 0 = reserved"
to:
"0 1 1 0 = Select 40GBASE-T PCS type"

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.7** *P* **44** *L* **23** # i-15

Marris, Arthur — Cadence Design Syst

Comment Type **T** *Comment Status* **A** *BY alignment*

There is a comment against 802.3by draft 3.0 to insert a row into Table 45-124 for 3.8.6 and mark it as reserved.

SuggestedRemedy

Make editing instruction so it changes
"3.8.6 Reserved Value always 0"
to:
"3.8.6 40GBASE-T capable 1 = PCS is able ...."

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.9** *P* **45** *L* **1** # i-6

Anslow, Peter — Ciena Corporation

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

"Change the name of Table 45-125 ..." should be "Change the title of Table 45-125 ..." and "(unchanged bits not shown)" should be "(unchanged rows not shown)".

SuggestedRemedy

Change "the name of Table 45-125 ..." to "the title of Table 45-125 ..." and change "(unchanged bits not shown)" to "(unchanged rows not shown)".

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.7** *P* **49** *L* **49** # i-102

Zimmerman, George — Aquantia, and CommS

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

Table 45-200, reserved row needs to be adjusted

SuggestedRemedy

add "and adjust the reserved row" to the editing instruction.

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.7.10.5** *P* **51** *L* **15** # i-27

RAN, ADEE — Intel Corporation

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

I understand and accept the reasons for deprecating the periodic training sequence functionality, but I am uncomfortable with the way it is done. Usually deprecated text is kept and marked as such so that the old functionality is documented. But this seems like rewriting history to delete the past, and the new text may be very confusing to read, especially once the strikeout text is gone.

The meaning of bits 7.32.2 and 7.33.9 should not be changed, since existing 10GBASE-T equipment may still have them implemented (though they might never be set to 1 in practice). The amended text includes things like "bit 7.33.9 should always read zero" which would immediately make some existing implementations non-compliant, if the bit reads as the value received in auto-negotiation.

Making the specific value 1 "reserved" or "not defined" (in Table 45-208) while the value 0 isn't reserved and is defined, is very unusual. It is also unusual to have a R/W bit (7.32.2) with the description "value always 0".

The changes in clause 55 should also keep the original behavior since existing devices may have it implemented (though they may never be requested to use it).

SuggestedRemedy

In 45.2.7.10.5, Keep the original text, and insert at the beginning "For 10GBASE-T, ". In addition, insert a new paragraph after the original text:
"The periodic training sequence request functionality is deprecated and may be unsupported by some implementations. The link partner may ignore a request caused by setting this bit to one. It is recommended to always set this bit to zero."

In Table 45-207, keep the original description of bit 7.32.2, and append a paragraph:
"NOTE--the periodic training sequence request functionality is deprecated. Link partners may ignore a value of one in this bit. It is recommended to always set this bit to zero."

In 45.2.7.11.7, keep the original text, and replace the new text (underlined) with the following paragraph:
"The periodic training sequence request functionality is deprecated. Implementations may ignore a value of one in this bit or have it always read as zero."

In Table 45-208, keep the original description of bit 7.33.9, and append a paragraph:
"NOTE--the periodic training sequence request functionality is deprecated. Implementations may ignore a value of one in this bit or have it always read as zero."

In Clause 55, do not delete the second paragraph of 55.3.4. Instead, change it to a note (informative instead of normative) and change the text as follows:

"NOTE-- During Auto-Negotiation a device may request its link partner to use periodic training sequence initialization. This functionality is deprecated; devices may ignore this

request if it is received, and it is recommended not to send it. A device that receives this request and does not ignore it generates a periodically repeating pattern, by reinitializing its scrambler state after every 16384 symbol periods to the 33-bit value generated by combining 0x39A422 for the 22 MSBs and SB10-SB0 from Table 55-15 generated by the local device for the 11 LSBs, as shown in Figure 55-13."

Also, delete the change instructions to Figure 55-13, subclause 55.3.5.3, and bit U20 in Table 55-15.

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.7.11.2** *P* **53** *L* **1** # i-30

RAN, ADEE Intel Corporation

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

In both of these long conditional sentences, the logic structure is "if (master/slave) and (complete) and if (no fault)...". The second "if" is confusing and should not be there.

Also, what if either "AN complete" is 0 or "fault" is 1?

SuggestedRemedy

Change "and if" to "and" twice in this subclause.

Append the following text: "In all other cases, neither SLAVE mode nor MASTER mode has been selected".

Response *Response Status* **C**

ACCEPT.
Reviewers are recommended to consider whether this impacts 10GBASE-T systems

---

Cl **45** *SC* **45.2.7.11.7c** *P* **53** *L* **35** # i-31

RAN, ADEE Intel Corporation

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

When read as 1 the bit "is used to indicate" but when read as 0 it just indicates. Also, in previous clauses 45.2.7.11.7a and 45.2.7.11.7b, bits just indicate.

Comment also applies to 45.2.7.11.8 and 45.2.7.11.9.

SuggestedRemedy

Change "is used to indicate" to "indicates", in 45.2.7.11.7c, 45.2.7.11.8, and 45.2.7.11.9.

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.7.13** *P* **54** *L* **9** # i-33

RAN, ADEE Intel Corporation

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

The non-underlined text does not match the original content of 45.2.7.13 (as of IEEE Draft P802.3/D3.2). The original text includes "or sent as part of the 10GBASE-T and 1000BASE-T technology message code as defined in 28C.11".

In addition, the new text inserted makes the text quite confusing. The first sentence says what this register defines and how it paps to auto-negotiation "Next Page" messages. The third sentence again refers to "Next Page" messages. But it seems as if neither 25GBASE-T nor 40GBASE-T use next pages; the second sentence refers to 25GBASE-T and 40GBASE-T advertising being done during training.

It is also unclear whether the new bits are exchanged only during training; if a device supports 10GBASE-T or lower speeds with clause 28 AN, aren't the new bits included in the U10 to U0 bits as defined in 28C.12?

I am not sure I know the answer to the above so the proposed remedy may need some corrections.

SuggestedRemedy

From the original content of P802.3-2015 as the baseline, change to the following text:

This register defines EEE advertisement for several device types. Devices that use Clause 28 auto-negotiation send EEE advertisement in the Unformatted Next Page following a EEE technology message code as defined in 28C.12 or as part of the 10GBASE-T and 1000BASE-T technology message code as defined in 28C.11. Devices that use Clause 73 auto-negotiation send EEE advertisement in the unformatted code field of Message Next Page with EEE technology message code as defined in 73A.4. 25GBASE-T and 40GBASE-T EEE advertisement is exchanged in the InfoField during training as defined in 113.4.2.5.10.

The assignment of bits in the EEE advertisement register and the correspondence with the bits in the Next Page messages or in the training InfoField are shown in Table 45-210.

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.7.14** *P* **55** *L* **2** # i-34

RAN, ADEE Intel Corporation

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

The "shall" in the next statement does not hold for the new PHYs.

SuggestedRemedy

Move the sentence
"Except for 10GBASE-T, members of the MultiGBASE-T PHY set exchange the EEE ability in the InfoField during link training. For these PHYs, the EEE LP ability register is updated after link is established."

To be after the first sentence, and prepend "For all other PHYs" to the next sentence.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Insert "Except for…" after the second sentence, and insert "For all other PHYs, before "When the AN"… to read:

All of the bits in the EEE LP ability register are read-only. A write to the EEE LP ability register shall have no effect. Except for 10GBASE-T, members of the MultiGBASE-T PHY set exchange the EEE ability in the InfoField during link training. For these PHYs, the EEE LP ability register is updated after link is established. For all other PHYs, when the AN process has been completed, this register shall reflect the contents of the link partner's EEE advertisement register. The assignment of bits in the EEE link partner ability register and the correspondence with the bits in the Next Page messages are shown in Table 45–211.

Cl **45** *SC* **45.2.7.14a** *P* **55** *L* **47** # i-122

Donahue, Curtis

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

"RW" is used in Table 45-211a.

SuggestedRemedy

In the second and third row of the table change "RW" to "R/W", and change the footnote at the bottom of the table to "R/W = Read/Write, RO = Read only"

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.5.3.9** *P* **59** *L* **42** # i-8

Anslow, Peter Ciena Corporation

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

"add" is not a valid editing instruction

SuggestedRemedy

Change "and add rows" to "and insert rows"

Response *Response Status* **C**

ACCEPT.

Cl **55** *SC* **55.3.4** *P* **61** *L* **8** # i-32

Hidaka, Yasuo — Fujitsu Laboratories of

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

The periodically repeating pattern is deleted from the existing standard of 10GBASE-T without an explanation and a note of the change from prior revisions of the standard.

SuggestedRemedy

Add a note of the change from prior revisions of the standard and an explanation for the reason of the change.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See comment i-27
[Editor's note added after comment resolution was complete:
the resolution to comment i-27 was:
In 45.2.7.10.5, Keep the original text, and insert at the beginning "For 10GBASE-T, ". In addition, insert a new paragraph after the original text:
"The periodic training sequence request functionality is deprecated and may be unsupported by some implementations. The link partner may ignore a request caused by setting this bit to one. It is recommended to always set this bit to zero."

In Table 45-207, keep the original description of bit 7.32.2, and append a paragraph:
"NOTE--the periodic training sequence request functionality is deprecated. Link partners may ignore a value of one in this bit. It is recommended to always set this bit to zero."

In 45.2.7.11.7, keep the original text, and replace the new text (underlined) with the following paragraph:
"The periodic training sequence request functionality is deprecated. Implementations may ignore a value of one in this bit or have it always read as zero."

In Table 45-208, keep the original description of bit 7.33.9, and append a paragraph:
"NOTE--the periodic training sequence request functionality is deprecated. Implementations may ignore a value of one in this bit or have it always read as zero."

In Clause 55, do not delete the second paragraph of 55.3.4. Instead, change it to a note (informative instead of normative) and change the text as follows:

"NOTE-- During Auto-Negotiation a device may request its link partner to use periodic training sequence initialization. This functionality is deprecated; devices may ignore this request if it is received, and it is recommended not to send it. A device that receives this request and does not ignore it generates a periodically repeating pattern, by reinitializing its scrambler state after every 16384 symbol periods to the 33-bit value generated by combining 0x39A422 for the 22 MSBs and SB10-SB0 from Table 55-15 generated by the local device for the 11 LSBs, as shown in Figure 55-13."

Also, delete the change instructions to Figure 55-13, subclause 55.3.5.3, and bit U20 in Table 55-15.

]

Cl **78** *SC* **78.1** *P* **65** *L* **8** # i-98

Zimmerman, George — Aquantia, and CommS

Comment Type **E** *Comment Status* **A** *BY alignment*

Editing instruction should reference that this edit is on the text WITHOUT the modifications in IEEE Std 802.3by-201x.

SuggestedRemedy

Change editing instruction so it reads, "Change text in clause 78.1.3.3.1 (shown without modifications of IEEE Std 802.3by-201x) as follows:"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Align text with IEEE Std 802.3by-201x (see comment i-180)

[Editor's note added after comment resolution was complete:
the resolution to comment i-180 was:
[1] The editor's note on line 6/7 be deleted.
[2] The editing instruction should be updated to read 'Change text in clause 78.1.3.3.1 (as modified IEEE Std 802.3by-201X) as follows:'.
[3] Based on IEEE P802.3by draft D3.0 the text '... an operating speed of 40 Gb/s or greater ...' be changed to read '... an operating speed of 25 Gb/s or greater ...' on line 12.
[4] Based on IEEE P802.3by draft D3.0 the text '... with an operating speed less than 40 Gb/s.' be changed to read '... with an operating speed of 10 Gb/s or below on line 15.
[5] Based on IEEE P802.3by draft D3.0 the text '... with an operating speed of 40 Gb/s or greater ...' be changed to read "... with an operating speed of 25 Gb/s or greater ...' on line 16 and line 21.
]

Cl **78** *SC* **78.1.3.3.1** *P* **65** *L* **41** # i-180

Law, David — Hewlett Packard Enter

Comment Type **E** *Comment Status* **A** *BY alignment*

Text needs updated based on the likelihood that IEEE P802.3by will be the second amendment to IEEE Std 802.3-2015 and that IEEE P802.3bq will be the third.

SuggestedRemedy

[1] The editor's note on line 6/7 be deleted.
[2] The editing instruction should be updated to read 'Change text in clause 78.1.3.3.1 (as modified IEEE Std 802.3by-201X) as follows:'.
[3] Based on IEEE P802.3by draft D3.0 the text '... an operating speed of 40 Gb/s or greater ...' be changed to read '... an operating speed of 25 Gb/s or greater ...' on line 12.
[4] Based on IEEE P802.3by draft D3.0 the text '... with an operating speed less than 40 Gb/s.' be changed to read '... with an operating speed of 10 Gb/s or below on line 15.
[5] Based on IEEE P802.3by draft D3.0 the text '... with an operating speed of 40 Gb/s or greater ...' be changed to read "... with an operating speed of 25 Gb/s or greater ...' on line 16 and line 21.

Response *Response Status* **C**

ACCEPT.

Cl **78** *SC* **78.1.4** *P* **65** *L* **24** # i-181

Law, David — Hewlett Packard Enter

Comment Type **E** *Comment Status* **A** *BY alignment*

Suggest that the editing instruction be placed after the subclause heading they relate to, they mention that this table has been modified by IEEE P802.3by, and places 25GBASE-T after the 25GBASE-SR entry with the 40GBASE-T entry after 40GBASE-ER4.

SuggestedRemedy

Suggest that the editing instruction be placed on line 28 after the subclause 78.1.4 'PHY types optionally supporting EEE' and be changed to read 'Insert the following new rows into Table 78-1 (as modified by IEEE Std 802.3by-201X) after the entry "25GBASE-SR" for 25GBASE-T and after the entry "40GBASE-ER4" for 40GBASE-T:'.

Response *Response Status* **C**

ACCEPT.
[Editor's note added after comment resolution: deleted 'the following' and changed editing instruction to end with 'as follows:' to be consistent with other comments and style.]

Cl **78** *SC* **78.2** *P* **65** *L* # i-182

Law, David — Hewlett Packard Enter

Comment Type **E** *Comment Status* **A** *BY alignment*

Editing instructions need updated based on the likelihood that IEEE P802.3by will be the second amendment to IEEE Std 802.3-2015 and that IEEE P802.3bq will be the third.

SuggestedRemedy

Suggest that the editing instruction be changed to read 'Insert the following new rows into Table 78-2 (as modified by IEEE Std 802.3by-201X) after the entry "25GBASE-CR-S" for 25GBASE-T and after the entry "40GBASE-CR4" for 40GBASE-T:'.

Response *Response Status* **C**

ACCEPT.
[Editor's note added after comment resolution: deleted 'the following' and changed editing instruction to end with 'as follows:' to be consistent with other comments and style.]

Cl **80** *SC* **80.1.3** *P* **69** *L* **36** # i-35

RAN, ADEE — Intel Corporation

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

Text box in the figure uses serif font type.

SuggestedRemedy

Change font to sans serif type.

Response *Response Status* **C**

ACCEPT.

Cl **80** *SC* **80.1.4** *P* **69** *L* **50** # i-36

RAN, ADEE — Intel Corporation

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

"transmitting 40GBASE-T" used as part of the definition of 40GBASE-T is inadequate. Also, it isn't just transmitting that is required.

SuggestedRemedy

Change "for transmitting 40GBASE-T over" to "for data communication at 40 Gb/s over".

Response *Response Status* **C**

ACCEPT.

Cl **80** *SC* **80.1.4** *P* **70** *L* **4** # i-123

Donahue, Curtis

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

Change "40Gb/s and 100 Gb/s PHYs" to "40 Gb/s and 100 Gb/s PHYs".

SuggestedRemedy

See Comment (add space in "40Gb/s").

Response *Response Status* **C**

ACCEPT.

Cl **A** *SC* **A** *P* **209** *L* **1** # i-9

Maguire, Valerie The Siemon Company

Comment Type **GR** *Comment Status* **A** *References*

The pending Technical Report ISO/IEC TR 11801-9905, "Guidelines for the use of installed cabling to support 25GBASE-T application", will contain useful information related to the implementation of 25GBASE-T with existing structured cabling systems.

SuggestedRemedy

Insert Annex A Bibliography and add: ISO/IEC TR 11801-9905 (draft), Guidelines for the use of installed cabling to support 25GBASE-T application

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Insert Annex A and add TR-9905 to bibliography

Add the following Editor's note:

Editor's note (to be removed prior to publication) - This reference is added in anticipation that a draft of TR-9905 from ISO/IEC SC25 WG3 will be available before close of sponsor ballot of IEEE P802.3bq and may be applicable to this specification.

Cl **FM** *SC* **FM** *P* **1** *L* **1** # i-159

Law, David Hewlett Packard Enter

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

Based on IEEE P802.3by entering sponsor ballot in November 2015, IEEE P802.3bq and IEEE P802.3bp entering sponsor ballot in December 2015, the published timeline for IEEE P802.3bq showing approval in June 2016, and the published timeline for IEEE P802.3bp showing approval in August 2016, it seems likely that that IEEE P802.3by will be the second amendment and IEEE P802.3bq will be the third amendment to IEEE Std 802.3-2015 after IEEE Std 802.3bw(TM)-2015 and IEEE Std 802.3by(TM)-201X.

SuggestedRemedy

Please change '(Amendment of IEEE Std 802.3(TM)-2015)' to read 'Amendment of IEEE Std 802.3(TM)-2015 as amended by IEEE Std 802.3bw(TM)-2015) and IEEE Std 802.3by(TM)-201X'

Response *Response Status* **C**

ACCEPT.

Cl **FM** *SC* **FM** *P* **11** *L* **18** # i-160

Law, David Hewlett Packard Enter

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

Text needs updated based on the approval of IEEE Std 802.3bw-2015, the likelihood that IEEE P802.3by will be the second amendment and IEEE P802.3bq will be the third amendment to IEEE Std 802.3-2015, and the use of the (TM) symbol only on the first instance.

SuggestedRemedy

Suggest that:

[1] The following text should be inserted prior to the existing text 'IEEE Std 802.3bq(TM)-201x':

IEEE Std 802.3bw-2015

Amendment 1--This amendment includes changes to IEEE Std 802.3-2015 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.

IEEE Std 802.3by-201x

Amendment 2--This amendment includes changes to IEEE Std 802.3-2015 and adds Clause 105 through Clause 112, Annex 109A, Annex 109B, Annex 110A, Annex 110B, and Annex 110C. This amendment adds MAC parameters, Physical Layers, and management parameters for the transfer of IEEE 802.3 format frames at 25 Gb/s.

[2] The text 'IEEE Std 802.3bq(TM)-201x' should be changed to read 'IEEE Std 802.3bq-201x'.

[3] The text 'This amendment includes changes to IEEE Std 802.3-2015 and adds Clause 113 ...' be changed to read 'Amendment 3--This amendment includes changes to IEEE Std 802.3-2015 and adds Clause 113 ...'.

Response *Response Status* **C**

ACCEPT.