Cl **81** *SC* **81.1.7.3** *P* **73** *L* **51** # 69

ZImmerman, George — CME Consulting, Inc.

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

Logic for CARRIER_STATUS is convoluted, unclear and stated twice. CARRIER_ON and CARRIER_OFF states possibly overlap.

SuggestedRemedy

Delete P73 L54 "CARRIER STATUS is set to CARRIER_OFF..." through P74 L3, "or if link_fault is Link Interruption"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Task Force to Discuss

Cl **105** *SC* **105.2** *P* **79** *L* **23** # 70

ZImmerman, George — CME Consulting, Inc.

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

Table 105-2 needs to be consistent with changes to 40GBASE-T stack up - delete BASE-R PCSs, and AUIs -

SuggestedRemedy

Delte "O" in columns for Clauses 107, 109, 109A and 109B

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Duplicate of comment 39

Cl **105** *SC* **105.2** *P* **79** *L* **23** # 39

Lo, William — Marvell Semiconductor

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

Clause 107, 109, 109A, 109B does not apply to 25GBASE-T

SuggestedRemedy

Delete the O from the 4 clauses above.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **28** *SC* **28.5.4.8** *P* **28** *L* **10** # 101

Law, David — Hewlett Packard Enterp

Comment Type **E** *Comment Status* **D** *BZ order*

An editors note should be added to delete this change if IEEE P802.3bq is approved prior to IEEE P802.3bz since IEEE P802.3bz contains the same change.

SuggestedRemedy

Suggest that an editors note be added that reads 'Editor's note (to be removed prior to publication) This change is also being made in IEEE P802.3bz. If, once the approval order of the various amendments becomes settled, IEEE P802.3bz is to be approved prior to IEEE P802.3bq this change should be deleted.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
OBE by comment 68

Cl **28** *SC* **28.3.2** *P* **27** *L* **26** # 100

Law, David — Hewlett Packard Enterp

Comment Type **E** *Comment Status* **D** *BZ Order*

An editors note should be added to delete this change if IEEE P802.3bq is approved prior to IEEE P802.3bz since IEEE P802.3bz contains the same change.

SuggestedRemedy

Suggest that an editors note be added that reads 'Editor's note (to be removed prior to publication) This change is also being made in IEEE P802.3bz. If, once the approval order of the various amendments becomes settled, IEEE P802.3bz is to be approved prior to IEEE P802.3bq this change should be deleted.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
It appears that BQ will precede BZ.
OBE by comment 63 -

Cl **00** *SC* **0** *P* **31** *L* **5** # 63

ZImmerman, George — CME Consulting, Inc.

Comment Type **E** *Comment Status* **D** *BZ Order*

It is now clear that 802.3bq will precede 802.3bz to sponsor ballot. References to bz and may be deleted and related editor's notes removed.

SuggestedRemedy

Editor to remove editor's notes referring to 802.3bz duplication of text and instructing which amendment is to carry these changes forward.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Task Force to discuss

Cl **28** *SC* **28.3.1** *P* **27** *L* **7** # 99

Law, David — Hewlett Packard Enterp

Comment Type **E** *Comment Status* **D** *BZ order*

Suggest the editing instructions should be based on inserting the new values alphabetically to remove a dependence on which amendment is approved first, it should also note that the subclause is also being modified by IEEE P802.3bz, but only if IEEE P802.3bz is approved first. There is also a typo in the editing instruction since '25Gig T' should read '25GigT'.

SuggestedRemedy

Suggest that:

[1] Update the editing instructions to read 'Insert new rows for 25GigT and 40GigT into the first list in subclause 28.3.1 (as modified by IEEE Std 802.3bz-201X), in alphabetical order:'.
[2] Add an editors note be added that reads 'Editor's note (to be removed prior to publication) If, once the approval order of the various amendments becomes settled, IEEE P802.3bq is to be approved prior to IEEE P802.3bz the editing instructions should be updated to remove reference to IEEE P802.3bz.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
OBE by 63

Cl **113** *SC* **113.7.1** *P* **181** *L* **22** # 72

Rossbach, Martin — Nexans

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

The Media Choices for 25GBASE-T are different to 40GBASE-T. Introduce a new table 113-22 for 25GBase-T.
(note - commenter indicated TR, changed on input since commenter isn't listed in ballot pool)

SuggestedRemedy

Add text to say: The cabling system used to support 25GBASE-T requires 4-pair balanced cabling with a nominal impedance of 100 listed in Table 113-22.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The references in Table 113–21— Cabling types and distances apply to 25GBASE-T and 40GBASE-T.

Cl **113** *SC* **113.5.4.3** *P* **174** *L* **14** # 92

Thompson, Geoff — GraCaSI S.A.

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

This sub-clause seems to grammatically indicate that a shield is always present. The other two uses of the term "shield" in the draft seem to indicate that a shield is optional.

SuggestedRemedy

Change grammar here to somehow indicate "when present" or change the other two uses.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

113 is shielded. Other instances of shield are found in Annex 113A which can be used for shielded or unshielded cabling.

Cl **113** *SC* **113.7.2** *P* **181** *L* **45** # 73

Rossbach, Martin — Nexans

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

Add ISO/IEC Class FA to Table "Cabling types and distances"

(note - commenter indicated TR, changed on input since commenter isn't listed in ballot pool)

SuggestedRemedy

Add ISO/IEC Class FA to Table "Cabling types and distances"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The 802.3bq link segment consists of up to 30 m of Class I that meets the transmission parameters of 113.7.2 Link segment transmission parameters. ISO/IEC Class FA does not uniquely specify a 30 m channel to consider for compliance to 113.7.2.

Cl **113** *SC* **113.1.2** *P* **82** *L* **44** # 109

Law, David — Hewlett Packard Enterp

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

Suggest that '... over four pairs of balanced cabling.' should read '... over four pairs of balanced twisted-pair structured cabling.'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.7.2.1** *P* **182** *L* **3** # 94

Thompson, Geoff GraCaSI S.A.

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

This sub-clause is either using the cabling industry definition for channel, which is not among the 802.3 definitions for channel -OR- it is using the the term "duplex channel" in place of the appropriate 802.3 term "link segment". I can't tell which. The two are not precisely equivalent. The term "duplex channel" as defined in 802.3 is not precise and the use here is not sufficiently precise to overcome that deficiency.

SuggestedRemedy

Remove the term "duplex channel" and replace with "link segment" or "lane of the link segment" as appropriate. If the technical values need to be adjusted, do that too.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The 25GBASE-T and 40GBASE-T PHY each employ full duplex baseband transmission over four pairs of balanced cabling.

Editorial license to change duplex channel to balanced cable pair(s) where applicable.

Cl **113** *SC* **113.7.2.3** *P* **182** *L* **24** # 30

Flatman, Alan LAN Technologies

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

Comment 220 to 802.3bq D2.0 proposed to change link segment RL requirements from what ISO/IEC had been proposing for Class I/II to the more onerous TIA Cat 8 limits. It was agreed to await the outcome of the Sep 2015 ISO/IEC meeting before finalising any change, as indicated by the Editor's Note on line 43. A formal liaison was forwarded from the ISO/IEC Sep meeting to notify 802.3 of its decision to introduce a slight relaxation to the RL requirements at frequencies above 1.6GHz. I propose that this is adopted by 802.3bq.

SuggestedRemedy

Adopt link segment RL requirements of:
19 dB 1-10 MHz
24-5log(f) dB 10-40 MHz
16 dB 40-130 MHz
35-9log(f) dB 130-1000 MHz
8 dB 1000-2000 MHz
Additionally, due to the close proximity of connectors in short channels, when insertion loss at 1600 MHz ? 15 dB, the channel return loss from 1600 MHz to 2000 MHz is 8-19log(f/1600).

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The link segment return loss specifications should be independent of the link segments measured insertion loss.

Cl **113.7** *SC* **113.7.2.1** *P* **182** *L* **15** # 79

Moffitt, Bryan CommScope

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

this solution isn't targeting work areas

SuggestedRemedy

change to

This includes the insertion loss of the balanced cabling pairs, including attachment cord, equipment cable and connector losses within each duplex channel.

Proposed Response *Response Status* **W**

PROPOSED REJECT. Although not targeted at work areas, text allows for work area and equipment cable considerations.

Cl **1** *SC* **1.4** *P* **24** *L* **23** # 38

Maguire, Valerie Siemon

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

Recognize that up to 30m, 2-connector category 7A channels, to be described in ISO/IEC TR 11801-9905, will support 25GBASE-T. (May wish to discuss Maguire-4 and Maguire-5 first.) This aligns with Clause 1.4 of 802.3-2015, which calls out Class E for support of 10GBASE-T.

SuggestedRemedy

Replace, "1.4.64j 25GBASE-T: IEEE 802.3 Physical Layer specification for a 25Gb/s LAN using four pairs of ANSI/TIA Category 8, ISO/IEC Class I, or ISO/IEC Class II balanced copper cabling. (See IEEE Std 802.3, Clause 113.)"

with, "1.4.64j 25GBASE-T: IEEE 802.3 Physical Layer specification for a 25Gb/s LAN using four pairs of ANSI/TIA Category 8, ISO/IEC Category 7A, ISO/IEC Class I, or ISO/IEC Class II balanced copper cabling. (See IEEE Std 802.3, Clause 113.)

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See resolution to comment#34.
Resolve with comments#36,37

Cl **113** *SC* **113.7.2** *P* **18** *L* **43** # 37

Maguire, Valerie Siemon

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

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

SuggestedRemedy

See page 4 of "maguire_3bq_01_1115.pptx" to see proposed table changes and to view these changes with revision marks.

Replace clause 113.7.2, starting at line 44, with:

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 distancesCabling references
ISO/IEC Class I / Class II30 mISO/IEC 11801-1 Edition 3
Category 830 mANSI/TIA-568-C.2-1
Table 113-22 25GBASE-T cabling types and distances
Cabling Supported link segment distancesCabling references
ISO/IEC Class I / Class II30 mISO/IEC 11801-1 Edition 3
Category 830 mANSI/TIA-568-C.2-1
Category 7A30 mISO/IEC TR 11801-9905

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See resolution to comment#34.
Resolve with comments 36,38

Cl **113** *SC* **113.7.1** *P* **181** *L* **20** # 36

Maguire, Valerie Siemon

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

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

SuggestedRemedy

See page 3 of "maguire_3bq_01_1115.pptx" to view these changes with revision marks.

Replace entire of clause 113.7.1 (except Editor's Note) with:

The cabling system used to support 40GBASE-T requires 4-pair balanced cabling with a nominal impedance of 100 W listed in Table 113-21. The cabling system used to support 25GBASE-T requires 4-pair balanced cabling with a nominal impedance of 100 W 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. The ISO/IEC 11801-1 cabling limit calculation minimums apply to the link segment specifications.
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. The ISO/IEC 11801-1 cabling limit calculation minimums apply to the link segment specifications.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See resolution to comment#34.
Resolve with comments 37,38

Cl **113** *SC* **113.7.2** *P* **181** *L* **38** # 35

Maguire, Valerie Siemon

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

The link segment consists of up to 30m of "cabling". Class I is not the correct object of the preposition in this sentence.

SuggestedRemedy

Replace, "A link segment consisting of up to 30 m of Class I that meets the transmission parameters..."

with, "A link segment consisting of up to 30 m of cabling that meets the transmission parameters...

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.7.3.2.1** *P* **188** *L* **37** # 29

Hajduczenia, Marek Bright House Network

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

Statements like this are easy to bake into equation "When Equation (113–30) values are greater than 75 dB, they shall revert to 75 dB." without the need for separate PICS. There are a few of them baked into the draft right now

SuggestedRemedy

Consider changing Equation 113–30 to the following form PSAACRF(*f*) >= min(75, 61-20log10(f/100)).
Remove PICS associated with the requirement: "When Equation (113–30) values are greater than 75 dB, they shall revert to 75 dB.". Remove statement "When Equation (113–30) values are greater than 75 dB, they shall revert to 75 dB.".
Repeat the process for other equations that carry similar upper bounds on equation values.
Repeat the process for other equations that carry similar lower bounds on equation values, using (max) rather than (min) function.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

With editorial licence remove shalls from text limiting reported values e.g.,
Change:
Calculations that result in insertion loss values less than 2 dB shall revert to a requirement of 2 dB.
To:
Calculations that result in insertion loss values less than 2 dB revert to a requirement of 2 dB.

Cl **113.7** *SC* **113.7.1** *P* **181** *L* **34** # 78

Moffitt, Bryan CommScope

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

What is the intent of this sentence that seems to single out the ISO spec?

The ISO/IEC 11801-1 cabling limit calculation minimums apply to the link segment specifications.

SuggestedRemedy

delete

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change The ISO/IEC 11801-1 cabling limit calculation minimums apply to the link segment specifications.
To: The referenced cabling limit minimums apply to the link segment specifications.

Cl **113.7** *SC* **113.7.4.1** *P* **189** *L* **13** # 81

Moffitt, Bryan CommScope

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

Why does this IL have a 3 dB floor, while the other one has a 2 dB floor?

SuggestedRemedy

set to a common floor

Proposed Response *Response Status* **W**

PROPOSED REJECT.

113.7.2.1 Insertion loss specification aligns with referenced cabling standards.

113.7.4 Direct attach cable assembly is a short reach link segment supporting up to 5 meters. The specification aligns with referenced standards "Direct attach channel insertion loss"

Cl **1** *SC* **1.3** *P* **24** *L* **12** # 34

Maguire, Valerie — Siemon

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

Insert a reference to the ISO/IEC Technical Report under development to address installed cabling support of 25GBASE-T.

SuggestedRemedy

Add to Normative references:

ISO/IEC TR 11801-9905 (draft), Guidelines for the use of installed cabling to support 25GBASE-T

Add ISO/IEC TR 11801-9905 to the Editor's Note on line 14 as follows:

References to published versions of ANSI/TIA-568-C.2-1-201x, ISO/IEC 11801-1, and ISO/IEC TR 11801-9905 will be substituted when available.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Task group needs to review ISO/IEC TR 11801-9905 (draft), "Guidelines for the use of installed cabling to support 25GBASE-T" to ensure specifications meet the 802.3bq link segment specifications.

Cl **113A.** *SC* **113A.3** *P* **224** *L* **10** # 87

Moffitt, Bryan — CommScope

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

duplicate statement two sentences above (and incorrect as stated)

SuggestedRemedy

delete The cable between the clamp and the balun should be straight and not in contact with the ground plane.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "between the clamp and the balun" to "between the breakout fixture and the balun"

Cl **113A** *SC* **113A.2** *P* **221** *L* **43** # 57

ZImmerman, George — CME Consulting, Inc.

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

"As shown in Figure 113A–2 the inner conductor on the bottom half of the clamp extends slightly (~0.1mm)" - this is not shown in the figure

SuggestedRemedy

Delete "As shown in Figure 113A-2", capitalize "the"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113A.** *SC* **113A.3** *P* **222** *L* **20** # 84

Moffitt, Bryan — CommScope

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

This sentence gives me the impression that it implies the documented test is normative (not just doubly equivalent). It is also not clear what it is refering to; the entire procedure, the measurement or the validation.

Note that other measurement methods are allowed providing they can demonstrate equivalent equivalent results to the method described in this Annex.

SuggestedRemedy

delete or figure a good way to move the repaired statement into the overview 113A.1

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Commenter fails to provide sufficient solution, statement has been substantially wordsmithed.

Cl **113A.** *SC* **113A.4** *P* **225** *L* **11** # 90

Moffitt, Bryan — CommScope

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

It would be better to see this image redrawn so it does not appear that the cable was pulled out an extra length from its original validation position.

SuggestedRemedy

as suggested

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Cl **113A** *SC* **113A.4** *P* **224** *L* **54** # 97

Cibula, Peter — Intel Corporation

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

The Task Force has been been careful to keep Annex 113A flexible and refer practitioners to the receiver specifications of the PHY under test for specific impairments, impairment source power levels, and relevant frequency ranges.

However, the description of the test setup, Page 224, Line 54 and Page 225, Line 1 states "…the signal generator output frequency is swept incrementally from 1 MHz to 2000 MHz…". Since 113A.4 describes the setup for the referenced specifications, this statement should more generic and refer to the "calling" normative text for the test frequency range.

SuggestedRemedy

Change the text in Annex 113A, Page 224, Line 54 and Page 225, Line 1 from

"As with the calibration procedure, the signal generator output frequency is swept incrementally from 1 MHz to 2000 MHz with a step size that should not exceed 1% of the preceding frequency value and with a dwell time at each step of at least 500 ms."

to

"As with the calibration procedure, the signal generator output frequency is swept incrementally over the specified frequency range with a step size that should not exceed 1% of the preceding frequency value and with a dwell time at each step of at least 500 ms."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113A.** *SC* **113A.3** *P* **224** *L* **31** # 88

Moffitt, Bryan — CommScope

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

Note 1 should be with the first figure

SuggestedRemedy

move it

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.5.4.3** *P* **174** *L* **25** # 74

McClellan, Brett — Marvell

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

It is unclear whether the signal power limit is 6dBm as stated in 113.5.4.3 or 6dBm plus the 10% variation allowed by Annex 113A.3.

SuggestedRemedy

Clarify that the limit is 6dBm by adding this footnote: “The 6dBm limit includes the 10% frequency-dependent variation mentioned in Annex 113A.3.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
OBE Comment 96

Cl **113** *SC* **113.5.4.3** *P* **174** *L* **24** # 96

Cibula, Peter — Intel Corporation

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

The text referring to the impairment signal power in 113.5.4.3 defines a maximum limit by stating that the calibrated power "...does not exceed 6 dBm..." The calibration procedure outlined in Annes 113A, 113A.3 Cable clamp validation uses a nominal value and a tolerance of +/- 10%.

Given that the calibration procedure permits a maximum value of 6.6dBm for the power level defined in Clause 113, the normative text should identify a nominal value with tolerance instead of a maximum value.

Note that the suggested remedy, which explicitly identifies the impairment signal power as a nominal level with a tolerance, is better aligned with Clause 40, which defines a signal level in the normative text (40.6.1.3.3) and a tolerance about this level in the informative annex (Annex 40B).

SuggestedRemedy

Change the text in 113.5.4.3, Page 174, Lines 24 and 25 from

"A sine wave with the amplitude held constant over the whole frequency range from 80 MHz to 2000 MHz, with the amplitude calibrated so that the signal power measured at the output of the clamp does not exceed 6 dBm, is used to generate the external electromagnetic field and corresponding shield current."

to

"A sine wave with the amplitude held constant over the whole frequency range from 80 MHz to 2000 MHz, with the amplitude calibrated to a nominal signal power of 6 dBm measured at the output of the clamp, is used to generate the external electromagnetic field and corresponding shield current."

and add a footnote to 113.5.4.3 stating

"The 6dBm nominal measured power may vary by +/-10% across frequency as discussed in Annex 113A."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113A.** *SC* **113A.4** *P* **224** *L* **36** # 89

Moffitt, Bryan — CommScope

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

this paragraph reads as if a new cable is now inserted, but the previous section ends instructing the tester not to move the cable used for validation

SuggestedRemedy

delete it or merge it with the original description in the validation step page 224 line 6

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Cl **113** *SC* **113.3.2.2** *P* **100** *L* **18** # 119

Law, David — Hewlett Packard Enterp

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

This paragraph states '... the transmit channel is in normal mode ...' however 'normal mode' is not described until five paragraph below where it is stated 'In the normal mode of operation, the PMA_TXMODE.indication message has the value SEND_N ...'. In addition, it seems some of this text in this paragraph is duplicative of the text five paragraphs below. For example it states '... the PCS Transmit process then transcode the first 96 25GMII transfers for 25GBASE-T, or 48 XLGMII transfers for 40GBASE_T into 512B/513B blocks ...', five paragraphs below it states '... the PCS Transmit function uses a 65B coding technique, transcoded to a mixed 513B-65B-RS-FEC-LDPC encoding to generate at each symbol period code-groups ...'.

Note: I have submitted another comment on this paragraph in respect to the need to include a 'shall' statement.

SuggestedRemedy

Suggest that paragraph four be deleted, with its content combined in to the ninth paragraph. The ninth paragraph would then read 'If a PMA_TXMODE.indication message has the value SEND_N, the PCS is in the normal mode of operation, and the PCS Transmit process shall continuously generates 65B blocks based upon the TXD <31:0> and TXC <3:0> signals on the 25GMII for 25GBASE-T, or the TXD <63:0> and TXC <7:0> signals on the XLGMII for 40GBASE-T. The subsequent functions of the PCS Transmit process then transcode the first 96 25GMII transfers for 25GBASE-T, or 48 XLGMII transfers for 40GBASE_T into 512B/513B blocks, append the subsequent four 25GMII transfers (25GBASE-T), or two XLGMII transfers (40GBASE-T) as (non-transcoded) 64B/65B blocks, scramble the bits, pack the resulting blocks, appending an unscrambled auxiliary bit, and split the bits into two sets. The first set is encoded by a Reed-Solomon encoder, and the second set is processed by a low density parity check (LDPC) encoder and then the two sets are joint mapped into a transmit LDPC frame of DSQ128 symbols. Transmit data-units are sent to the PMA service interface via the PMA_UNITDATA.request primitive.'.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Proposed text has been clear evidenced by Clause 55 resulting in interoperable 10GBASE-T implementations.

Cl **00** *SC* **0** *P* **00** *L* **0** # 95

Thompson, Geoff GraCaSI S.A.

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

I have no idea what the term "channel" means throughout your document. It seems to be used for both physical signaling paths and "virtual" paths. Further, it is not clear whether it intends to point to one pair when used as a physical term or as a collective term for the 4 pairs. In any case, its use does not conform to the definitions for channel in cl. 1.4 nor are the uses modified to be sufficiently precise.

SuggestedRemedy

Review the entire draft for the use of the term "channel". In that review consider the augmentation of the cl. 1.4 definition being made by other drafts in ballot. When appropriate use the term "link segment" (your draft is already pretty good about this). Align usage to cl. 1.4 definitions and add defining modifiers to make each use of the term explicitly specific.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Editor to review the draft and replace 'channel' with 'link segment' where appropriate. Editor to review draft to check alignment with proposed definition of 'channel' in 802.3by.
Commenter to note that usage of channel is largely as in existing text in 802.3-2015 (specifically Clauses 45 & 55), which any new proposed definition should be made to accommodate.

Cl **113** *SC* **113.4.2.2.1** *P* **142** *L* **12** # 28

Hajduczenia, Marek Bright House Network

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

It would be much clearer for a reader what this is, if the definitions of xpr_master, xpr_slave were given in a tabular form, with explanation of what X and Y axis are ...

SuggestedRemedy

Please consider putting these into tables and adding X/Y descriptions. And yes, I do realize it is not changed text, but then it is not a technical change.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The text as it is will be familiar to the reader from Clause 55. Changing its format may cause reader confusion that the substance has changed.

Cl **28** *SC* **28.3.2** *P* **27** *L* **17** # 40

ZImmerman, George CME Consulting, Inc.

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

Need to update text for link_fail_inhibit_timer to include MultiGBASE-T and be consistent with Table.

SuggestedRemedy

Change "operating at 10 Gb/s" to "in the MultiGBASE-T PHY set"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **78** *SC* **78.5** *P* **68** *L* **38** # 41

ZImmerman, George CME Consulting, Inc.

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

Need to include 25GBASE-T in text

SuggestedRemedy

Change "10GBASE-T and 40GBASE-T PHY" to "PHY in the MultiGBASE-T set" in 2 places (L38 & L40)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.7.11.7c** *P* **54** *L* **40** # 54

ZImmerman, George CME Consulting, Inc.

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

45.2.7.11.7c should be 45.2.7.11.7g since it is after the bz bits

SuggestedRemedy

see comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.2.2.5** *P* **105** *L* **53** # 47

ZImmerman, George CME Consulting, Inc.

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

Editors note no longer applicable

SuggestedRemedy

Delete editors note

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.14c** *P* **38** *L* **4** # 9

Anslow, Pete — Ciena

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

References to amendments that are expected to complete before this one should be of the form "IEEE Std 802.3xx-201x"

SuggestedRemedy

In editing instructions, change all references:
from "IEEE P802.3by" to "IEEE Std 802.3by-201x"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Editor to check with 802.3 leadership on expected completion date of amendments

Cl **113** *SC* **113.3.2.2.15** *P* **110** *L* **1** # 50

ZImmerman, George — CME Consulting, Inc.

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

needs to include 25GMII with XLGMII

SuggestedRemedy

Change to "Where the XLGMII" to "Where the 25GMII or XLGMII"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.3.2.2.16** *P* **110** *L* **31** # 51

ZImmerman, George — CME Consulting, Inc.

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

64/65b are BASE-T codes, not the BASE-R codes

SuggestedRemedy

Change 25GBASE-R and 40GBASE-R to 25GBASE-T and 40GBASE-T

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.7.10.4e** *P* **52** *L* **9** # 53

ZImmerman, George — CME Consulting, Inc.

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

subclause 45.2.7.10.4e should be 4h

SuggestedRemedy

Change 45.2.7.10.4e to 45.2.7.10.4h

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.6** *P* **36** *L* **16** # 7

Anslow, Pete — Ciena

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

The allocation of bits shown in Table 45-7 for the "25GBASE-T PMA" is "1 0 0 1 1 1"
This is not the allocation proposed in the meeting of editors on 13 February, see:
http://www.ieee802.org/3/by/public/adhoc/architecture/anslow_021815_25GE_adhoc.pdf#page=6
This allocation would put 25GBASE-T between 40GBASE-T and 100GBASE-CR10
The proposed allocation was "1 1 0 1 1 1" which is adjacent to the 25G allocations being made by P802.3by.

SuggestedRemedy

Change the allocation from "1 0 0 1 1 1" to "1 1 0 1 1 1"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.3.2.2.4** *P* **101** *L* **48** # 123

Law, David — Hewlett Packard Enterp

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

This subclause states 'Note that these figures show the mapping from XGMII to 64B/65B block for a block containing eight data characters.' however the figure itself doesn't provide this note. Suggest it would be better to provide the note in respect to the figure on the figure itself.

SuggestedRemedy

Suggest that the note 'Note that this figure shows the mapping from XGMII to 64B/65B block for a block containing eight data characters.' be move to, or added to, Figures 113-6 and 113-8. A similar note should also be added to Figure 113-7.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.1.3.3** *P* **88** *L* **24** # 111
Law, David Hewlett Packard Enterp

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

This subclause states that support for the EEE capability is advertised '... during the PMA_PBO_Exch state.'.

SuggestedRemedy

Either add a cross reference to the Figure 113–30 'PHY Control state diagram' or, since this is introduction text, change the text '... during the PMA_PBO_Exch state.' To read '... during link startup.'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change text reading "during the PMA_PBO_Exch state." to read "during link startup."

Cl **00** *SC* **0** *P* **00** *L* **0** # 91
Thompson, Geoff GraCaSI S.A.

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

I have examined the draft for correct usage of the terms "MDI" and "MDI connector". All usage of those terms seems to be correct.

SuggestedRemedy

No change required.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
No change required.

Cl **1** *SC* **1.4.278a** *P* **25** *L* **3** # 98
Law, David Hewlett Packard Enterp

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

Shouldn't the entry for 'MultiGBASE-T' be placed between the entry for '1.4.277 mixing segment' and '1.4.278 multiport device'. If this is correct, it should be noted that IEEE P802.3bn is adding the entry '1.4.277a modulation error ratio (MER)'.

SuggestedRemedy

Change the text '1.4.278a MultiGBASE-T' to read '1.4.277b MultiGBASE-T'. Note that this designation may need swapped with IEEE P802.3bn once the approval order becomes more definitive

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113A.** *SC* **113A.3** *P* **223** *L* **30** # 86
Moffitt, Bryan CommScope

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

should be plural - two are shown

SuggestedRemedy

change to Oscilloscopes, power meters or spectrum analyzers

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.8.1** *P* **195** *L* **8** # 93
Thompson, Geoff GraCaSI S.A.

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

The term "(published)" is unnecessary. It is assumed that all references are published.

SuggestedRemedy

Remove the text: "(published)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113A.** *SC* **113A.3** *P* **223** *L* **7** # 85
Moffitt, Bryan CommScope

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

indentations not matching

SuggestedRemedy

dent

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Format lines 6-12 as a single paragraph.

Cl **1** *SC* **1.4** *P* **24** *L* **22** # 58
ZImmerman, George CME Consulting, Inc.

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

Editing instruction should be 'as inserted by IEEE P802.3by'

SuggestedRemedy

See comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.6.1** *P* **44** *L* **25** # 32

Anslow, Pete Ciena

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

This draft is allocating bit 3.8.6, but not reflecting this change in 45.2.3.6.1.

SuggestedRemedy

Show the second sentence of 45.2.3.6.1 as changing to "The PCS type abilities of the PCS are advertised in bits 3.8.9 and 3.8.6:0."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.3** *P* **24** *L* **9** # 33

Maguire, Valerie Siemon

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

Follow 802.3-2012 style for ordering of punctuation and footnotes.

SuggestedRemedy

Move the superscript 1 after the "." in the first reference.

(i.e. replace "Cabling{^}1." with "Cabling.{^}1")

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

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

Anslow, Pete Ciena

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

Now that the 802.3bx revision has been approved by the IEEE SASB, the "base_year" variable in all files should be changed from 201x to 2015

SuggestedRemedy

Change the "base_year" variable in all files from 201x to 2015 which should change all instances of "IEEE Std 802.3-201x" to "IEEE Std 802.3-2015"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **FM** *SC* **FM** *P* **11** *L* **28** # 2

Anslow, Pete Ciena

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

This draft does not have the latest version of the Introduction text as per the latest 802.3 FrameMaker template.
On line 28, "IEEE Std 802.3 is comprised of" should be "IEEE Std 802.3 is composed of"

SuggestedRemedy

Change "IEEE Std 802.3 is comprised of" to "IEEE Std 802.3 is composed of"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Make suggested change AND
Editor to confirm that latest version of introduction text is in use in the draft.

Cl **80** *SC* **80.1.4** *P* **71** *L* **51** # 42

ZImmerman, George CME Consulting, Inc.

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

RS-FEC needs nonbreaking hyphen

SuggestedRemedy

change hyphen to nonbreaking

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **81** *SC* **81.1** *P* **73** *L* **19** # 43

ZImmerman, George CME Consulting, Inc.

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

Clean up alignment in Figure 81-1 on 40GBASE-T stack

SuggestedRemedy

See comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **105** *SC* *P* **77** *L* **1** # 44
ZImmerman, George CME Consulting, Inc.
Comment Type **E** *Comment Status* **D** *EZ*
Hanging "bq 25G/40GBASE-T"
SuggestedRemedy
Delete
Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **113** *SC* **113.1.1** *P* **81** *L* **53** # 45
ZImmerman, George CME Consulting, Inc.
Comment Type **E** *Comment Status* **D** *EZ*
typo - tranfer
SuggestedRemedy
change "tranfer" to "transfer"
Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **113** *SC* **113.1.1** *P* **81** *L* **49** # 46
ZImmerman, George CME Consulting, Inc.
Comment Type **E** *Comment Status* **D** *EZ*
Clause 1.4 is an unuseful reference, be more precise
SuggestedRemedy
Change "Clause 1.4" cross ref to "1.4.278a"
Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **113** *SC* **113.3.2.2.13** *P* **109** *L* **33** # 49
ZImmerman, George CME Consulting, Inc.
Comment Type **E** *Comment Status* **D** *EZ*
Space should be nonbreaking
SuggestedRemedy
See comment
Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **113** *SC* **113.3.2.2.20** *P* **115** *L* **22** # 52
ZImmerman, George CME Consulting, Inc.
Comment Type **E** *Comment Status* **D** *EZ*
Hyphen should be nonbreaking
SuggestedRemedy
See comment
Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.65.1** *P* **39** *L* **49** # 65
ZImmerman, George CME Consulting, Inc.
Comment Type **E** *Comment Status* **D** *EZ*
Add in 45.2.1.65.1 and 45.2.1.65.2 to the draft to include cross references to Clause 113
SuggestedRemedy
See comment
Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **113** *SC* **113.4.2.5.3** *P* **147** *L* **10** # 56
ZImmerman, George CME Consulting, Inc.
Comment Type **E** *Comment Status* **D** *EZ*
Clean up figure 113-28, tick marks for bit settings protrude below line, align labels
SuggestedRemedy
See comment
Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **113.7** *SC* **113.7.4.3.5** *P* **190** *L* **1** # 83
Moffitt, Bryan CommScope
Comment Type **E** *Comment Status* **D** *EZ*
fix :,
SuggestedRemedy
delete comma
Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **1** *SC* **1.4.131a** *P* **24** *L* **38** # 59
ZImmerman, George CME Consulting, Inc.

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

2,000 should be 2000 per style guide

SuggestedRemedy

See comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **FM** *SC* *P* **11** *L* **3** # 60
ZImmerman, George CME Consulting, Inc.

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

Update title to include 25 Gb/s operation in introductory text

SuggestedRemedy

See comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **28** *SC* **28.5.3** *P* **27** *L* **40** # 61
ZImmerman, George CME Consulting, Inc.

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

reference to just clause 1.4 is less than useful

SuggestedRemedy

Replace reference to Clause 1.4 with 1.4.278a

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.3.2** *P* **29** *L* **37** # 62
ZImmerman, George CME Consulting, Inc.

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

typo: "PHY devicePHY device managed object class"

SuggestedRemedy

Change to "PHY device managed object class"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.1** *P* **81** *L* **22** # 106
Law, David Hewlett Packard Enterp

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

Suggest '... in this document. This clause also specifies ...' should be changed to read '... in this clause. This clause also specifies ...'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **35** *L* **27** # 64
ZImmerman, George CME Consulting, Inc.

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

Table 45-3 subclauses for 45.2.1.70 - should be active cross references, not external as indicated

SuggestedRemedy

Replace 45.2.1.70 and on external references with active cross references

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.5.1.1.24** *P* **32** *L* **18** # 102
Law, David Hewlett Packard Enterp

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

The attributes 'aLDFastRetrainCount' and 'aLPFastRetrainCount' are not part of the '10GBASE-T Operating Margin package (conditional)' but instead are part of the 'Energy-Efficient Ethernet (optional)' package, see IEEE Std 802.3-2015 Table 30–1e.

SuggestedRemedy

Change the editing instruction '... (as part of the MultiGBASE-T operating package) ...' to read '... (as part of the 'Energy-Efficient Ethernet package)...' for subclause 30.5.1.1.24 and 30.5.1.1.25. If the intent was to move these attributes, provide editing instructions for table 30-1e.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change editing instruction.
The intent was NOT to move these, so no editing instructions for table 30-1e due to this.

Cl **45** *SC* **45.2.3.13** *P* **46** *L* **19** # 66

ZImmerman, George CME Consulting, Inc.

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

Include 25GBASE-T in editing instruction

SuggestedRemedy

See comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113.5** *SC* **113.5.3.2** *P* **171** *L* **45** # 77

Moffitt, Bryan CommScope

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

Should identify the term SFDR

SuggestedRemedy

The Spurious-Free Dynamic Range (SFDR) of the transmitter

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Term is defined in the abbreviations section (Clause 1.5) of 802.3

Cl **113.7** *SC* **113.7.4.2** *P* **189** *L* **25** # 80

Moffitt, Bryan CommScope

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

ReturnLoss needs space

SuggestedRemedy

as suggested

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113.7** *SC* **113.7.4.3.1** *P* **190** *L* **1** # 82

Moffitt, Bryan CommScope

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

Table 113–22 why in a table?

SuggestedRemedy

change to equation

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Requirement is clear

Cl **45** *SC* **45.2.7.11.2** *P* **54** *L* **5** # 55

ZImmerman, George CME Consulting, Inc.

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

"10GBASE-T status register" should be "MultiGBASE-T status register"

SuggestedRemedy

Change "10GBASE-T" to "MultiGBASE-T"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.3.2.2** *P* **100** *L* **3** # 118

Law, David Hewlett Packard Enterp

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

Should list both parts of the PCS 64B/65B Transmit state diagram.

SuggestedRemedy

Suggest the text '... state diagram in Figure 113–18 and the ...' to read '... state diagram in Figure 113–18 and Figure 113-19, and to the ...'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.7** *P* **181** *L* **5** # 71

ZImmerman, George — CME Consulting, Inc.

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

"Each of the four pairs supports an effective data rate of 10 Gb/s in each direction simultaneously."
Only refers to 40GBASE-T. Explanatory statement needs to be updated to include 25GBASE-T.

SuggestedRemedy

Insert, "for 40GBASE-T and 6.25 Gb/s for 25GBASE-T " after "of 10 Gb/s ".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.1.1** *P* **81** *L* **49** # 25

Hajduczenia, Marek — Bright House Network

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

"Where a functionality or register refers to any member of the MultiGBASE-T set of PHYs, as defined in Clause 1.4, that nomenclature is used."

SuggestedRemedy

It is not "Clause 1.4", it is "1.4" as in subclause 1.4.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.4.2.4** *P* **144** *L* **39** # 143

Law, David — Hewlett Packard Enterp

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

Suggest that '... shall allow LFER of ...' should read '... shall allow a LFER than ...' (missing 'a').

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Insert "an" to read:
'…shall allow an LFER of less than…"

Cl **113** *SC* **113.3.6.2.2** *P* **128** *L* **34** # 138

Law, David — Hewlett Packard Enterp

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

Subclause 113.1.6 'Conventions in this clause' states that 'The notation used in the state diagrams follows the conventions of 21.5.' and IEEE Std 802.3 Table 21–1 'State diagram operators' defines 'Equals (a test of equality)' as '='.

SuggestedRemedy

Change the four instances of '==' to read '='.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.4.5.1** *P* **157** *L* **5** # 145

Law, David — Hewlett Packard Enterp

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

Suggest that '... PMA Link Monitor and ...' should read '... PMA Link Monitor state diagram and ...'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.3.2.3** *P* **120** *L* **18** # 136

Law, David — Hewlett Packard Enterp

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

Suggest the text '... by setting the parameter scr_status to OK.' be changed to read '... by setting the scr_status parameter of the PMA_SCRSTATUS.request primitive to OK.'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.4.2.4** *P* **144** *L* **35** # 142
Law, David Hewlett Packard Enterp

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

Suggest that 'PMA Receive contains the ...' should read 'The PMA Receive function contains the ...'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.1.5** *P* **89** *L* **14** # 112
Law, David Hewlett Packard Enterp

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

Not sure what a 'logical 25GMII/XLGMII' is. Shouldn't implementations be compatible at the 25GMII/XLGMII, if implemented.

SuggestedRemedy

Suggest the text '... at the MDI and at a logical 25GMII/XLGMII, if implemented.'. be changed to read '... at the MDI and at the 25GMII/XLGMII, if implemented.'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.5.1.1.24** *P* **32** *L* **18** # 103
Law, David Hewlett Packard Enterp

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

Suggest '... Change 30.5.1.1.24 aLDFastRetrainCount include ...' to read '... Change text of 30.5.1.1.24 aLDFastRetrainCount to include ...'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.5.3.9** *P* **60** *L* **50** # 23
Hajduczenia, Marek Bright House Network

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

AM61 has reference broken into two lines without any need.

SuggestedRemedy

Extend the size of "Sublause" column to accomodate reference unbroken into two lines. There are plenty of other locations in PICS in thid draft where references are

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.5.1.1.25** *P* **32** *L* **34** # 104
Law, David Hewlett Packard Enterp

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

Suggest '... Change 30.5.1.1.25 aLPFastRetrainCount include ...' to read '... Change the text of 30.5.1.1.25 aLPFastRetrainCount to include ...'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **55** *SC* **55.6** *P* **65** *L* **2** # 24
Hajduczenia, Marek Bright House Network

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

Odd "." character at the beginning of title of 55.6

SuggestedRemedy

Please remove the "." character. Seems like it is a dot.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.3.2.3** *P* **120** *L* **3** # 134
Law, David Hewlett Packard Enterp

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

Update the cross reference.

SuggestedRemedy

Suggest that the text '... in Figure 113–20 ...' be changed to read '... in Figure 113–20 and Figure 113–21 ...'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.4.6.1** *P* **162** *L* **8** # 146
Law, David Hewlett Packard Enterp

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

Mark the state box wide enough to fit the state name inside.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.3.2.2.15** *P* **110** *L* **5** # 132
Law, David Hewlett Packard Enterp

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

Suggest that the actual title of the state diagram be used, and a cross reference added.

SuggestedRemedy

Suggest that the text '... as specified in the transmit process state diagram.' be changed to read '... as specified in the PCS 64B/65B Transmit state diagram (see Figure 113–17 and 113-18).'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.3.2.2.5** *P* **103** *L* **12** # 125
Law, David Hewlett Packard Enterp

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

Suggest the subscripts be removed from D0 through D2 as subscripts aren't used elsewhere in the figure.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.3.2.2.6** *P* **106** *L* **40** # 127
Law, David Hewlett Packard Enterp

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

Suggest that '25GMII/XLGMII encodes a control ...' be changed to read 'The 25GMII/XLGMII encodes a control ...'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.3.2.2.6** *P* **106** *L* **44** # 128
Law, David Hewlett Packard Enterp

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

Close brackets without open brackets.

SuggestedRemedy

Suggest that '... into a 7-bit C code).' be changed to read '... into a 7-bit C code.'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.3.2.2.11** *P* **109** *L* **16** # 129
Law, David Hewlett Packard Enterp

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

This subclause states '... only valid on the first octet of the 25GMII (TXD<0:3> and RXD<0:3>) ...'. Is this correct, shouldn't these be 8 bits?

SuggestedRemedy

Suggest that '... only valid on the first octet of the 25GMII (TXD<0:3> and RXD<0:3>) ...' should read '... only valid on the first octet of the 25GMII (TXD<7:0> and RXD<7:0>) ...'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.3.2.2.11** *P* **109** *L* **16** # 130
Law, David Hewlett Packard Enterp

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

Suggest that '... TXD<0:7> and RXD<0:7>).' should read '… TXD<7:0> and RXD<7:0>).

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.3.2.2.11** *P* **109** *L* **17** # 131
Law, David Hewlett Packard Enterp

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

Suggest that '... octet of TxD ...' should read '... octet of TXD …'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.3.2.2.16** *P* **111** *L* **22** # 27
Hajduczenia, Marek Bright House Network

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

"Block field (see Figure 113–10)"

SuggestedRemedy

make sure that "(see" starts in the second line - it is not very readable.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **FM** *SC* **FM** *P* **14** *L* **1** # 12
Anslow, Pete Ciena

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

The task force name has not been changed in the header for even pages of the TOC file

SuggestedRemedy

Correct the task force name in the header for even pages of the TOC file

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.1.2** *P* **82** *L* **30** # 108
Law, David Hewlett Packard Enterp

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

The solid line from the OSI layers to the top of the MEDIUM should be dotted as are other similar lines.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.4.131a** *P* **24** *L* **37** # 3
Anslow, Pete Ciena

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

A comma is not used in 802.3 as a thousands separator. The Style guide has: "Digits should be separated into groups of three, counting from the decimal point toward the left and right. The groups should be separated by a space, and not a comma, period, or dash. If the magnitude of the number is less than one, the decimal point should be preceded by a zero. In numbers of four digits, the space is not necessary, unless four-digit numbers are grouped in a column with numbers of five digits or more."
Consequently, "2,000" should be "2000"

SuggestedRemedy

Change "2,000" to "2000"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.1.2** *P* **82** *L* **28** # 107

Law, David — Hewlett Packard Enterp

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

Suggest that 'AUTO-NEGOTIATION' be replaced with 'AN' in both the 25GBASE-T and 40GBASE-T layer diagrams since the abbreviation AN is defined in the list.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.5** *P* **25** *L* **11** # 4

Anslow, Pete — Ciena

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

The expansion of abbreviations in 802.3 does not use initial caps unless the text is a proper noun.

SuggestedRemedy

Change "Attenuation to Crosstalk Ratio - Far End" to "attenuation to crosstalk ratio - far end"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **28** *SC* **28.5.3** *P* **27** *L* **40** # 5

Anslow, Pete — Ciena

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

"See Clause 1.4" is a very unhelpful cross-reference.

SuggestedRemedy

Change "See Clause 1.4" to "See 1.4.278a" where 1.4.278a is a cross-reference.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **35** *L* **32** # 6

Anslow, Pete — Ciena

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

In Table 45-3, 45.2.1.74 through 45.2.1.77 are shown in forest green, but they should be cross-references

SuggestedRemedy

Change 45.2.1.74 through 45.2.1.77 to be cross-references in black font.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.14c** *P* **38** *L* **1** # 8

Anslow, Pete — Ciena

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

Subclause 45.2.1.14c being inserted by P802.3by comes after 45.2.1.14a as inserted by P802.3bw, hence it should be 45.2.1.14b not 45.2.1.14c.
Similar issue for Table 45-17c, which should be Table 45-17b.
A comment has been submitted against P802.3by D2.1 to correct these.

SuggestedRemedy

Change 45.2.1.14c to 45.2.1.14b
Change Table 45-17c to Table 45-17b

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.1.3** *P* **83** *L* **7** # 26

Hajduczenia, Marek — Bright House Network

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

"modulation symbol rate of 2000 Msymbols/s results in a symbol period of 500.0 ps." - how much more precise you want to be about 500 ps? What is the target precision you're after?

SuggestedRemedy

Change "500.0 ps" to "500 ps"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.13.1** *P* **47** *L* **30** # 105

Law, David — Hewlett Packard Enterp

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

This change states that '... This bit is a reflection of the PCS_status variable defined in ... in 113.3.6.1 for 25GBASE-T and 40GBASE-T ...'. I can't find mention of PCS_status variable in subclause 113.3.6.1 'State diagram conventions', nor in 113.3.6.2.2 'Variables'. The nearest mention I could find was in subclause 113.3.6.3 'Messages' however this just states 'Indicates whether the PCS is in a fully operational state. (See 113.3.7.1.)'. Based on this suggest the reference should be to 113.3.7.1.

SuggestedRemedy

Suggest the text '... in 113.3.6.1 for 25GBASE-T and 40GBASE-T ...' be changed to read ... in 113.3.7.1 for 25GBASE-T and 40GBASE-T ...'

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.3.6.4** *P* **135** *L* **8** # 141

Law, David — Hewlett Packard Enterp

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

There seem to be three different formats used for when comparing T_TYPE(tx_raw) to a set of possible values On line 8 there is the example where the options are in brackets: 'T_TYPE(tx_raw) = (E + D + LI +T)'; on line 10 there is an example where they are not: 'T_TYPE(tx_raw) = C + LII'; and on line 16 the brackets are around the whole equation: 'T(T_TYPE(tx_raw) = C+LII)'. Suggest that the first example, where the options are listed in brackets where there is more than one, be used. And strictly speaking shouldn't these actually use the 'Indicates membership' character '∈' rather than the '=' character. If so the first example 'T_TYPE(tx_raw) = (E + D + LI +T)' would read 'T_TYPE(tx_raw) ∈ {E, D, LI, T}'.

SuggestedRemedy

Please use a consistent format when comparing T_TYPE(tx_raw) and R_TYPE(rx_coded) to a set of possible values

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.14c.0a** *P* **38** *L* **19** # 11

Anslow, Pete — Ciena

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

A subclause being inserted before 45.2.1.14c.1 should be 45.2.1.14c.a, not 45.2.1.14c.0a

SuggestedRemedy

Change the inserted subclause number (and the number in the editing instruction) from 45.2.1.14c.0a to 45.2.1.14c.a (actually 45.2.1.14b.a due to another comment)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.14c** *P* **38** *L* **6** # 10

Anslow, Pete — Ciena

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

The title of Table 45-17c should not have initial caps for "Extended Ability"

SuggestedRemedy

Change "Extended Ability" to "extended ability" as per P802.3by D2.1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.6** *P* **44** *L* **3** # 13

Anslow, Pete — Ciena

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

The editing instruction for Table 45-123 does not match the changes being made: there are more changes than described and the whole table is shown.
This table is being modified by P802.3by which is likely to complete before P802.3bq.
The change made to the reserved row is incorrect.
Footnote a is incorrect.

SuggestedRemedy

Change the editing instruction to "Change Table 45–123 (as modified by IEEE Std 802.3by-201x) as follows:"
Show "0 1 1 1" as "= Select 25GBASE-R PCS type"
Show the reserved bits as being changed to "3.7.15:4"
Change footnote a to "R/W = Read/Write, RO = Read only"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.7** *P* **44** *L* **28** # 14

Anslow, Pete Ciena

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

Table 45-124 is being modified by P802.3by which is likely to complete before P802.3bq.
"Ignore when read" has been changed to "Value always 0" in the reserved row by the 802.3bx revision.

SuggestedRemedy

Coordinate with the P802.3by editorial team to show consistent changes between the two amendments.
Change "Ignore when read" to "Value always 0" in the reserved row.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.7.5a** *P* **44** *L* **47** # 15

Anslow, Pete Ciena

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

The subclause for "25GBASE-T capable (3.8.9)" should be inserted between:
45.2.3.7.3 Receive fault (3.8.10) and 45.2.3.7.4 100GBASE-R capable (3.8.5)
The P802.3by amendment is changing this to be:
45.2.3.7.3 Receive fault (3.8.10)
45.2.3.7.3a 25GBASE-R capable (3.8.7)
45.2.3.7.4 100GBASE-R capable (3.8.5)
Consequently, The subclause for bit 3.8.9 should be 45.2.3.7.3aa and for bit 3.8.6 should be 45.2.3.7.3b giving:
45.2.3.7.3 Receive fault (3.8.10)
45.2.3.7.3aa 25GBASE-T capable (3.8.9)
45.2.3.7.3a 25GBASE-R capable (3.8.7)
45.2.3.7.3b 40GBASE-T capable (3.8.6)
45.2.3.7.4 100GBASE-R capable (3.8.5)

SuggestedRemedy

Change the editing instruction for the bit 3.8.9 subclause to: "Insert 45.2.3.7.3aa after 45.2.3.7.3 and before 45.2.3.7.3a (as inserted by IEEE Std 802.3by-201x) as follows:"
Add a separate editing instruction for the bit 3.8.6 subclause : "Insert 45.2.3.7.3b after 45.2.3.7.3a (as inserted by IEEE Std 802.3by-201x) as follows:"
Renumber the subclauses accordingly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.9** *P* **45** *L* **20** # 16

Anslow, Pete Ciena

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

The change of title for register 3.20 is not shown in Table 45-119.
The added "1" in the second sentence of 45.2.3.9 should be underlined.
The change to the title of Table 45-125 is not consistent with the register name "EEE control and capability 1"

SuggestedRemedy

Show the change of title for register 3.20 in Table 45-119.
Show the added "1" in the second sentence of 45.2.3.9 in underline font.
Change to the title of Table 45-125 from "EEE control and capability register 1 bit definitions" to "EEE control and capability 1 register bit definitions"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.12.1.1** *P* **200** *L* **18** # 17

Anslow, Pete Ciena

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

Comment i-52 against P802.3bx D3.0 changed all instances of “enquiries” to "inquiries" in 802.3

SuggestedRemedy

Change “enquiries” to "inquiries".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.12.1.2** *P* **200** *L* **30** # 18

Anslow, Pete Ciena

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

"IEEE Std 802.3-201x, Clause 113" should be "IEEE Std 802.3bq-201x, Clause 113"
On line 38, "conform to IEEE Std 802.3-201x" should be "conform to IEEE Std 802.3bq-201x"

SuggestedRemedy

Change "IEEE Std 802.3-201x, Clause 113" to "IEEE Std 802.3bq-201x, Clause 113"
On line 38, change "conform to IEEE Std 802.3-201x" to "conform to IEEE Std 802.3bq-201x"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.6** *P* **44** *L* **25** # 31

Anslow, Pete — Ciena

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

This draft is expanding the PCS type selection field from 3.7.2:0 to 3.7.3:0, but there are places other than Table 45-123 where this change must also be reflected.

SuggestedRemedy

In 45.2.3.1.2 the draft incorrectly has "(3.7.1:0)". Show a change from "(3.7.2:0)" to "(3.7.3:0)"
In 45.2.3.2.7 the draft incorrectly has "(3.7.1:0)" (2 instances). Show a change from "(3.7.2:0)" to "(3.7.3:0)" (2 instances).
Bring 45.2.3.6.1 in to the draft and show the title as changing to: "PCS type selection (3.7.3:0)" and show the first sentence as changing to "The PCS type shall be selected using bits 3 through 0."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.4.131a** *P* **24** *L* **43** # 19

Hajduczenia, Marek — Bright House Network

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

Missing serial comma in "10GBASE-T, 25GBASE-T and 40GBASE-T."

SuggestedRemedy

Change "10GBASE-T, 25GBASE-T>>,<< and 40GBASE-T."
The same change on page 25, line 4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.7.14** *P* **56** *L* **12** # 20

Hajduczenia, Marek — Bright House Network

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

Spurious "." in line 12 and line 41 and many more scattered around the document, primarily after tables.

SuggestedRemedy

Remove "." in the empty lines.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.7.14c** *P* **57** *L* **23** # 21

Hajduczenia, Marek — Bright House Network

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

"0= Local device requests" should be "0 = Local device requests"

SuggestedRemedy

Multiple instances of "0=" which should be "0 =". Scrub clause 45, please.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.5** *P* **59** *L* **12** # 22

Hajduczenia, Marek — Bright House Network

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

PICS usually start at the top of the page.

SuggestedRemedy

Please place PICS at the top of the page.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **All** *L* **All** # 148

Law, David — Hewlett Packard Enterp

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

Please note that I am willing to re-submit any, or all, of my comments on the initial sponsor ballot of IEEE P802.3bq if the IEEE P802.3bq Task Force would prefer.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. No change required to draft - Editor's recommendation is to make changes now that we can.

Cl **113** *SC* **113.3.2.2.5** *P* **103** *L* **13** # 126

Law, David — Hewlett Packard Enterp

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

The 65B block is actually the input to the PCS 64B/65B Receive state diagram (figure 113-20 and 113-21). See definition of rx_coded<64:0> in subclause 113.3.6.2.2.'.

SuggestedRemedy

Suggest that in Figure 113–7:

[1] The text 'Input to decoder function 65B block' be changed to read 'Input to decoder function 65B block (see figure 113-20 and 113-21)'
[2] Label the 'Data/Ctrl header' bit as rx_coded<0> and bit 7 of D7 as rx_coded<64>.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggestion [1]
do not implement suggestion [2] as it would make the figure quite crowded.

Cl **113** *SC* **113.3.2.2.4** *P* **102** *L* **11** # 124

Law, David — Hewlett Packard Enterp

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

The 65B block is actually the output of the PCS 64B/65B Transmit state diagram (figure 113-18 and 113-19). See definition of tx_coded<64:0> in subclause 113.3.6.2.2 and description subclause 113.3.2.2.15 which states 'The contents of each block are contained in a vector tx_coded<64:0> ...'.

SuggestedRemedy

Suggest that in Figure 113-6:

[1] The text 'Output of encoder function 65B block' be changed to read 'Output of encoder function 65B block (see figure 113-18 and 113-19)'
[2] Label the 'Data/Ctrl header' bit as tx_coded<0> and bit 7 of D7 as tx_coded<64>.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggestion [1]
Do not implement suggestion [2] on Figure 113-6, as it will make the figure very crowded

Cl **113** *SC* **113.3.2.2.6** *P* **107** *L* **33** # 48

ZImmerman, George — CME Consulting, Inc.

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

Table 113-1 footnote a is inappropriate

SuggestedRemedy

Delete footnote a

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.3.2.3** *P* **120** *L* **10** # 135

Law, David — Hewlett Packard Enterp

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

Suggest this this text should mention that the 64B/65B mapping to the XGMII is performed by the PCS 64B/65B Receive state diagrams by decoding the output of the transcoded, rx_coded<64:0>.

SuggestedRemedy

Suggest the text '... are transcoded to 64B/65B, and the 64B/65B ordered sets are converted to two 32-bit data blocks in the case of 25GBASE-T, or 64-bit data blocks for 40GBASE-T to obtain the signals RXD and RXC for transmission to the 25GMII/XLGMII.' be changed to read '... are transcoded to 64B/65B. This process generates the 64B/65B block vector 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, as specified in the PCS 64B/65B Receive state diagram (see Figure 113–20 and 113-21).'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.3.2.2.4** *P* **101** *L* **48** # 122

Law, David — Hewlett Packard Enterp

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

The statement 'The PCS Transmit bit ordering shall conform to Figure 113–6 and Figure 113–8.' appears to be a duplicate 'shall' statement to that found in the first paragraph of subclause 113.3.2.2 'PCS Transmit function' which reads 'The PCS Transmit function shall conform to ... and the PCS Transmit bit ordering in Figure 113–6 and Figure 113–8.'.

SuggestedRemedy

Suggest that:

[1] The text 'The PCS Transmit bit ordering shall conform to Figure 113–6 and Figure 113–8.' be changed to read 'The PCS Transmit bit ordering is shown in Figure 113–6 and Figure 113–8.'.
[2] The subclause cross-reference for PICS items PCT3 be changed from 113.3.2.2.4 to 113.3.2.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.5.3.3** *P* **59** *L* **27** # 68

ZImmerman, George — CME Consulting, Inc.

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

Add in subclause 45.5.3.3 PMA/PMD management functions - add in *40T and *25T as MM111 and MM112

SuggestedRemedy

see comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.5.3.2** *P* **59** *L* **27** # 67

ZImmerman, George — CME Consulting, Inc.

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

add option *25T to indicate implementation of 25GBASE-T PMA, like 40GBASE-T

SuggestedRemedy

See comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113.5** *SC* **113.5.2.1** *P* **170** *L* **17** # 75

Moffitt, Bryan — CommScope

Comment Type **E** *Comment Status* **D** *PMA Electrical*

B not identified

SuggestedRemedy

delete or ID

Proposed Response *Response Status* **W**

PROPOSED REJECT.
While commenter is correct, the test fixture is identical to that in Clause 55, and differences with the Clause 55 figure may confuse the reader.

Cl **113.5** *SC* **113.5.2.1** *P* **170** *L* **41** # 76

Moffitt, Bryan — CommScope

Comment Type **T** *Comment Status* **D** *PMA Electrical*

why only up to 1600 MHz? Why no balun spec?

SuggestedRemedy

Make full range. Also the balun should have some specification RL> 15 dB balance > 35 dB across 2GHz range

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Specification is clear and proven for droop testing in 10GBASE-T.

Cl **113** *SC* **113.3.2.2.24** *P* **119** *L* **25** # 133

Law, David — Hewlett Packard Enterp

Comment Type **T** *Comment Status* **D** *Ref Model*

It is the tx_symb_vector parameter of the PMA_UNITDATA.request primitive that can be set to the value ALERT (see subclause 113.2.2.3.1). As a result of that the next time the PMA_UNITDATA.request message is sent it will have the value ALERT.

SuggestedRemedy

Suggest the text '... the PMA_UNITDATA.request message is set to the value ALERT.' be changed to read '... the PMA_UNITDATA.request parameter tx_symb_vector is set to the value ALERT.'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.2.2.3.2** *P* **94** *L* **32** # 116

Law, David — Hewlett Packard Enterp

Comment Type **T** *Comment Status* **D** *Ref Model*

This subclause states that 'The PCS generates PMA_UNITDATA.request (SYMB_4D) synchronously with every transmit clock cycle.'. As well as SYMB_4D, the value ALERT can also be conveyed by this message (see subclause 113.2.2.3.1). Shouldn't this case also be covered, if so the simplest approach would appear to be to send a PMA_UNITDATA.request message every clock cycle.

SuggestedRemedy

Suggest that 'The PCS generates PMA_UNITDATA.request (SYMB_4D) synchronously with every transmit clock cycle.' should be changed to read 'The PCS generates PMA_UNITDATA.request synchronously with every transmit clock cycle.'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.2.1.2.3** *P* **91** *L* **11** # 115

Law, David — Hewlett Packard Enterp

Comment Type **T** *Comment Status* **D** *Ref Model*

This subclause states that 'The effect of receipt of this primitive is specified in 113.3.6.2.' however 'PMA_LINK.indication', nor the 'link_status' parameter communicated by this primitive, are referenced in subclause 113.3.6.2 'State diagram parameters' for the PCS state diagrams. Instead this primitive is generated by the Link Monitor state diagram and used by Auto-Negotiation.

SuggestedRemedy

Suggest the text 'The effect of receipt of this primitive is specified in 113.3.6.2.' should be replaced with 'Auto-Negotiation uses this primitive to detect a change in link_status as described in Clause 28.'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.1.3** *P* **85** *L* **19** # 110

Law, David — Hewlett Packard Enterp

Comment Type **T** *Comment Status* **D** *Ref Model*

PMA_LINK.indication (link_status) is not shown connecting the PMA to the PCS in Figure 113-4 '25GBASE-T and 40GBASE-T service interfaces', is not listed in subclause 113.2.2 'PMA service interface', and is not used in the PCS state diagram on referenced in the PCS related text.

SuggestedRemedy

Suggest that:

[1] Remove the 'link_status' signal from the connection above the 'LINK MONITOR' block to the 'PCS TRANSMIT & TRANSMIT CONTROL' block in figure 113-3 'Function block diagram'.
[2] Remove the 'link_status' signal from figure 113-5 'PCS reference diagram'.
[3] Remove the 'link_status' signal from the connection above the 'LINK MONITOR' block to the 'PMA SERVICE INTERFACE' in figure 113-23 'PMA reference diagram'.
[4] Update the variable definition for 'link_status' in subclause 113.4.5.1 'State diagram variables' to read 'The link_status parameter set by PMA Link Monitor state diagram and communicated through the PMA_LINK.indicate primitive.'.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
PMA_LINK.indication is defined under 113.2.1.2, as it communicates as well to the technology independent interface

Cl **113** *SC* **113.4.6.1** *P* **162** *L* **45** # 147

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Comment Type **T** *Comment Status* **D** *State diagrams*

The variable 'pcs_status' is not defined in the PMA state diagram variables in subclause 113.4.5.1.

SuggestedRemedy

Suggest that variable description be added that reads:

pcs_status
The pcs_status parameter generated by the PCS and passed to the PMA via the PMA_SCRSTATUS.request primitive (see 113.2.2.5).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
PCS_status is defined under "Messages" (113.3.6.3) P132 L9, however, it is uppercase in PCS, in error.
Change "PCS_status" to "pcs_status" on P132 L9 and throughout clause 113.

Cl **113** *SC* **113.4.5.1** *P* **157** *L* **2** # 144

Law, David — Hewlett Packard Enterp

Comment Type **T** *Comment Status* **D** *State diagrams*

The definition for the 'link_control' variable states 'This variable is defined in 28.2.6.2' however IEEE Std 802.3 subclause 28.2.6.2 defines the PMA_LINK.request primitive.

SuggestedRemedy

Suggest that variable description be changed to read 'The link_control parameter generated by Auto-Negotiation and passed to the PMA via the PMA_LINK.request primitive (see 113.2.1.1).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.3.6.1** *P* **135** *L* **2** # 140

Law, David — Hewlett Packard Enterp

Comment Type **T** *Comment Status* **D** *State diagrams*

It appears the PCS 64B/65B Transmit state diagram is not controlled by the state of the PMA PHY Control State Diagram when EEE is not implemented. In this case, as stated in the definition for the pcs_data_mode variable in subclause 113.4.5.1, the 'PHY operates as if the value of this variable is TRUE'. Hence once 'pcs_reset = false' and the PHY enterers training, the MAC could send a packet (it does not take account of link_status) causing the PCS 64B/65B Transmit state diagram to start encoding the packet on to tx_coded even though the PHY is in training mode. This could then result in the transition from the tx_mode = SEND_T to SEND_N occurring mid packet resulting in the transmission of a truncated frame and an error at the receiver. Similarly when EEE is implemented, pcs_data_mode = true could occur mid packet with similar results.

SuggestedRemedy

Suggest that:

[1] A new 'TX_RESET' state be added that is entered on open arrows of 'pcs_reset + !pcs_data_mode', sets 'tx_coded <= LBLOCK_T', and exited on 'T_TYPE(tx_raw) = C + LII' to the 'TX_INIT' state. This ensure reset is only exited during idle.
[2] The new 'TX_RESET' state is also entered until tx_mode = SEND_N using a suitable variable.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Task force to discuss.
This same state diagram control has been operational in 10GBASE-T systems without report of the problem indicated. If a change is needed, recommend commenter file a maintenance request on Clause 55.

Cl **113** *SC* **113.3.6.3** *P* **132** *L* **1** # 139

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Comment Type **T** *Comment Status* **D** *State diagrams*

Delete the subclause 113.3.6.3 'Messages', a subclause 113.3.6.2 'State diagram parameters' since for the following reasons there are not related to the state diagram.

[1] The message 'PMA_UNITDATA.indication' and the parameter 'rx_symb_vector' are not referenced in the PCS state diagrams.
The input to Figures 113-18 and 113-19 'PCS 64B/65B Receive state diagram' are 'rx_coded' which is the 'Input to decode function 65B block' in Figure 113-7 'PCS Receive bit ordering'. As can be seen in that figure, there are a number of processes that have already been performed on the parameter 'rx_symb_vector' from the message 'PMA_UNITDATA.request' before 'rx_coded' is presented as the input to the PCS state diagram.
[2] The message 'PMA_UNITDATA.request' and the parameter 'tx_symb_vector' are not referenced in the PCS state diagrams. The output of Figures 113-20 and 113-21 'PCS 64B/65B Transmit state diagram' are 'tx_coded' which is the 'Output of encoder function 65B block' in Figure 113-6 'PCS transmit bit ordering'. As can be seen in that figure, there are a number of processes that have to be performed before the parameter 'tx_symb_vector' for the message 'PMA_UNITDATA.request' is generated.
[3] 'PCS_status' is not a message, but instead a parameter of a message, regardless it is not generated or used by the by the PCS state diagrams.

SuggestedRemedy

Delete the subclause 113.3.6.3 'Messages'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.3.2.3** *P* **120** *L* **23** # 137

Law, David — Hewlett Packard Enterp

Comment Type **T** *Comment Status* **D** *State diagrams*

Subclause 113.3.7.1 'Status' seems to be the only location where the definition of the parameter PCS_status is provided where it states that 'Indicates whether the PCS is in a fully operational state. It is only true if block_lock is true and hi_lfer is false.'. In addition the PCS_status parameter is defined as having the values 'OK' and 'NOT_OK' (see 113.2.2.6.1) and not 'true' and 'false'.

Since this is a subclause of 113.3.7 'PCS management' suggest this is not the best place to provide the only definition. Instead, since Figure 113-3 shows PCS_status sourced from the PCS RECEIVE block, suggest this definition be provided in subclause 113.3.2.3 'PCS Receive function'.

SuggestedRemedy

Suggest that in subclause 113.3.2.3 'PCS Receive function' the text '... hi_lfer is de-asserted, the PCS Receive process continuously accepts blocks.' be changed to read '... hi_lfer is de-asserted, the PCS_status parameter of the PMA_PCSSTATUS.request primitive is set to OK, and the PCS Receive process continuously accepts blocks.'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.3.2.2** *P* **100** *L* **38** # 121

Law, David — Hewlett Packard Enterp

Comment Type **T** *Comment Status* **D** *State diagrams*

Subclause 113.3.2.2 states that when tx_mode = SEND_T the '... PCS Transmit generates sequences of code-groups (TAn, TBn, TCn, TDn) defined in 113.3.4.2 ...' and that when tx_mode = SEND_N the '... PCS Transmit function uses a 65B coding technique ...' but there seems to be no description of the transition from the tx_mode = SEND_T to SEND_N. I assume however the transition from the tx_mode = SEND_T to SEND_N state needs to ensure that the first LDPC frame sent is complete.

SuggestedRemedy

Suggest that a statement be added to subclause 113.3.2.2 that on the transition from the tx_mode = SEND_T to SEND_N the PCS shall ensure this results in the transmission a of complete first LDPC frame.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Task force to discuss with comment 140

Cl **113** *SC* **113.3.2.2** *P* **100** *L* **35** # 120

Law, David — Hewlett Packard Enterp

Comment Type **T** *Comment Status* **D** *State diagrams*

While this subclause states that the PCS transmit function shall meet the PCS state diagram (Figure 113-18) and bit ordering (Figures 113–6 and 113–8) I don't believe that either of these address the operation of what appears to be a three way multiplexor controlled by the PMA_TXMODE.indication parameter tx_mode which selects between training (SEND_T), normal (SEND_N) and sending zeros (SEND_Z). There does appear to be a description of this in paragraphs six, seven and nine of this subclause, however they do not contain 'shall' statements, nor does it appear there are any related shall statements elsewhere. Based on this there doesn't appear to be any 'shall' statements in relation to the control of the parameter tx_mode.

SuggestedRemedy

Suggest that:

[1] The text '... has the value SEND_Z, PCS Transmit passes a vector of zeros ...' be change to read '... has the value SEND_Z, PCS Transmit shall pass a vector of zeros ...'.
[2] The text '... has the value SEND_T, PCS Transmit generates sequences ...' be changed to read '... has the value SEND_T, PCS Transmit shall generate sequences ...'.
[3] The text 'In the normal mode of operation, the PMA_TXMODE.indication message has the value SEND_N, and the PCS Transmit function uses a ...' to read 'If a PMA_TXMODE.indication message has the value SEND_N, the PCS is in the normal mode of operation, and the PCS Transmit function shall use a
[4] The PICS be updated to add these three new shall statements.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.3.2.1** *P* **99** *L* **52** # 117

Law, David — Hewlett Packard Enterp

Comment Type **T** *Comment Status* **D** *State diagrams*

This subclause states that 'PCS Reset sets pcs_reset=ON while ...' however subclause 113.3.6.2.2 'Variables' defines pcs_reset as a Boolean.

SuggestedRemedy

Suggest that '... sets pcs_reset=ON ...' should be changed to read '... sets pcs_reset = true ...'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.2.1.2** *P* **90** *L* **41** # 113

Law, David Hewlett Packard Enterp

Comment Type **T** *Comment Status* **D** *State diagrams*

This subclause states that 'This primitive informs the PCS, PMA PHY Control function, and the Auto-Negotiation algorithm about the status of the underlying link.'. 'PMA_LINK.indication' however is not listed in subclause 113.2.2 'PMA service interface', so is not passed to the PCS, and 'PMA_LINK.indication', nor the link_status parameter communicated by this primitive, are used in Figure 113–30 'PHY Control state diagram'.

SuggestedRemedy

Suggest the text 'This primitive informs the PCS, PMA PHY Control function, and the Auto-Negotiation algorithm about the status of the underlying link.' be changed to read 'This primitive informs the Auto-Negotiation algorithm about the status of the underlying link.'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **113** *SC* **113.2.1.2.1** *P* **90** *L* **50** # 114

Law, David Hewlett Packard Enterp

Comment Type **T** *Comment Status* **D** *State diagrams*

While not used by 25GBASE-T or 40GBASE-T, for completeness, and to match the definition in Clause 28, suggest that the READY value be listed as well.

SuggestedRemedy

Suggest that:

[1] The text '... can take on one of two values: FAIL or OK.' be changed to read '... can take on one of three values: FAIL, READY, or OK.'.
[2] Add the text 'READY For 25GBASE-T and 40GBASE-T link_status does not take the value READY.' between 'FAIL' and 'OK'.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Removed in response to prior ballot comments, and not needed for 25G/40GBASE-T