Cl **FM** *SC* **FM** *P* **1** *L* **9** # 11

Hajduczenia, Marek — Charter Communications

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Missing amendment number

SuggestedRemedy

It looks like you will be Amendment 9 to 802.3-2022 when published

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Our analysis indicates we are the most likely to be Amendment 7, but an amendment number should not be used until assigned by Mr. Law. Editorial notes indicate which amendments are assumed to precede this one.

Cl **FM** *SC* **FM** *P* **1** *L* **25** # 12

Hajduczenia, Marek — Charter Communications

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

List of amendment incomplete and in wrong order

SuggestedRemedy

Change "IEEE Std 802.3dd-20XX, IEEE Std 802.3de-20XX, IEEE Std 802.3cs-20XX, IEEE Std 802.3db-20XX, IEEE Std 802.3ck-20XX, IEEE Std 802.3cw-20XX, and IEEE Std 802.3cx-20XX" to IEEE Std 802.3dd-20XX, IEEE Std 802.3cs-20XX, IEEE Std 802.3db-20XX, IEEE Std 802.3db-20XX, IEEE Std 802.3ck-20XX, IEEE Std 802.3cx-20XX, and IEEE Std 802.3de-20XX" and might want to add .3cw and .3cy for good measure in case they go ahead of you.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
"IEEE Std 802.3db-20XX" is repeated in the proposed list.
P802.3cz today is the only of the four unnumbered amendments to advance to WG ballot.

Cl **FM** *SC* **FM** *P* **1** *L* **26** # 43

Grow,Robert — RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

On January 25, 2022, P802.3de was designated amendment 6 (dd, cs, db, ck, cx, de). P802.3cw is unlikely to be assigned a lower amendment number than P802.3cz.

SuggestedRemedy

Reorder ammendment list. If no other amendments enter WG ballot in May, it is probably safe to write P802.3cz as following amendment 6. Obviously if Mr. Law provides a different amendment order, we follow that.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Follow amendment numbers assigned by the WG Chair, with cover page and FM Introduction list reflecting amendments identified as preceding P802.3cz (currently dd, cs, db, ck, dx, de).

Cl **FM** *SC* **FM** *P* **1** *L* **28** # 13

Hajduczenia, Marek — Charter Communications

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

Missing spacing between numeric value and units in "2.5 Gb/s, 5Gb/s, 10Gb/s, 25 Gb/s and 50 Gb/s"

SuggestedRemedy

Add missing spaces

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **FM** *SC* **FM** *P* **1** *L* **29** # 10

Hajduczenia, Marek — Charter Communications

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

"Draft D2.0 is prepared for Task Force review"

SuggestedRemedy

Likely for initial Working Group review. Next versions should say "working Group ballot recirculation"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **FM** *SC* **FM** *P* **1** *L* **43** # 44

Grow,Robert RMG Consulting

Comment Type **ER** *Comment Status* **D** *P802.3/D3.2 alignement*

This is not the current copyright statement.

SuggestedRemedy

Update to latest IEEE SA editorial templates.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **FM** *SC* **FM** *P* **7** *L* **15** # 45

Grow,Robert RMG Consulting

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

WG ballot group is now known.

SuggestedRemedy

Remove Editor's Note and include WG ballot list.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **FM** *SC* **FM** *P* **9** *L* **19** # 46

Grow,Robert RMG Consulting

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

P802.3 has changed capitalization of Ethertype to EtherType per current RAC preference.

SuggestedRemedy

"EtherType"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **FM** *SC* **FM** *P* **10** *L* **39** # 47

Grow,Robert RMG Consulting

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

The Section Nine description was modified during P802.3 balloting.

SuggestedRemedy

Update for consistency with P802.3/D3.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **FM** *SC* **FM** *P* **10** *L* **44** # 48

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

On January 25, 2022, P802.3de was designated amendment 6 (dd, cs, db, ck, cx, de). P802.3cw is unlikely to be assigned a lower amendment number than P802.3cz.

SuggestedRemedy

Consider reordering ammendment list order. If no other amendments enter WG ballot in May, it is probably safe to write P802.3cz as following amdnement 6 unless Mr. Law provides a different amendment order.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See #43.

Cl **FM** *SC* **FM** *P* **11** *L* **8** # 236

Marris, Arthur Cadence Design Systems

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

802.3de is expected to be Amendment 6

SuggestedRemedy

Renumber 802.3de to Amendment 6 and renumber cs, db, ck and cx appropriately

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
#See 43.

Cl **FM** *SC* **FM** *P* **19** *L* **51** # 49

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

P802.3cw now appears to be later than P802.3cz in reaching RevCom.

SuggestedRemedy

Evaluate in May if the note should be updated to remove reference to cw.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See #43.

Cl **00** *SC* **0** *P* *L* # 237

Murty, Ramana Broadcom

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

The draft describes FEC and optical link characterization methods that are at odds with all recent optical link definitions in IEEE 802.3. I need more time to evaluate the technical and economic implications of this proposal.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The commenter did not recommend a change to the draft.
See #266.

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

Brown, Matt Huawei

Comment Type **E** *Comment Status* **D** *Text improvement*

The editor's note inserted in each clause refers to "baseline text", but is likely intending to refer to the "base standard" which includes the most recent 802.3 revision and any amendments preceding 802.3cz. The term "baseline" refers to an adopted proposal for incorporation into an amendment.

SuggestedRemedy

In each clause and annex, in the editor's note starting with "The baseline text used to generate...", change "baseline text" to "base standard".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Substitute "baseline text" with "base text".

"Baseline text" may be misleading, but the use of "base standard" implies that we are amending a published standard.

Most probably, we will be amending an approved draft revision of IEEE Std 802.3 referred to as IEEE Std 802.3-202x.

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

Brown, Matt Huawei

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

Throughout the draft when listing an IEEE standard the year for unapproved standards is inconsistent. The draft template uses 202x whereas inserted text in this draft uses 20XX.

SuggestedRemedy

Replace "20XX" with "202x" throughout this draft. For example, change "IEEE Std 802.3dd-20XX" to "IEEE Std 802.3dd-202x".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **106** *L* # 21

Hayashi,Takehiro HAT Labs

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

The order of Figure 166-31, 32 is incorrect.

SuggestedRemedy

correct the position of figures.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.3** *P* **20** *L* **4** # 15

Hajduczenia, Marek Charter Communications

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

No new normative references

SuggestedRemedy

Remove subclause 1.3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.4** *P* **20** *L* **20** # 50

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Consider update to Note and check base text in preceding amendments. Other comments will point out any base text changes required by the current six numbered amendment drafts and P802.3/D3.2. If accepted, the note repeated on other clauses will also need to be similarliy updated.

SuggestedRemedy

The baseline text used to generate the editing instructions is IEEE 802.3 Draft 3.2 (March 2022) as amended by IEEE 802.3dd Draft 3.1 (March 2022), IEEE 802.3cs Draft 3.2 (March 2022), IEEE 802.3db Draft 3.0 (March 2022), IEEE 802.3ck Draft 3.1 (March 2022), IEEE 802.3cx Draft 3.2 (March 2022), and IEEE 802.3de Draft 3.0 (March 2022).
Subclause, Table and Figure numbers (possibly baseline text) may change in response to assigned amendment order.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Replace "baseline text" with "base text" and add the suggested list of base text:

"IEEE 802.3 Draft 3.2 (March 2022) as amended by IEEE 802.3dd Draft 3.1 (March 2022), IEEE 802.3cs Draft 3.2 (March 2022), IEEE 802.3db Draft 3.0 (March 2022), IEEE 802.3ck Draft 3.1 (March 2022), IEEE 802.3cx Draft 3.2 (March 2022), and IEEE 802.3de Draft 3.0 (March 2022).
Subclause, Table and Figure numbers (possibly baseline text) may change in response to assigned amendment order."

Update similar notes repeated on other clauses of the draft.

Cl **1** *SC* **1.4.62a** *P* **20** *L* **30** # 247

Dawe, Piers Nvidia

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

This says "a 10 Gb/s Ethernet full duplex local area network" but doesn't it make point-to-point link(s), unlike a CSMA/CD or PON Physical Layer? "Network" is misleading.
"Ethernet" seems to be redundant (compare other definitions). Wordsmithing, adding "multimode" to give the reader a bit more idea what this thing is like.

SuggestedRemedy

Change "for a 2.5 Gb/s Ethernet full duplex local area network over optical fiber for use in automotive applications." to "for 2.5 Gb/s over multimode optical fiber for automotive use." Similarly for the other rates.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
"for 2.5 Gb/s full duplex over multimode optical fiber for use in automotive applications."

Cl **1** *SC* **1.4.204a** *P* **21** *L* **5** # 51

Grow,Robert RMG Consulting

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

Use of the term being defined within the definition is circular and should be avoided.

SuggestedRemedy

BASE-AU: The set of PHYs that use a BASE-U Physical Coding Sublayer with PMA/PMD specifications for operation over optical fiber in the automotive environment, including 2.5GBASE-AU, 5GBASE-AU, 10GBASE-AU, 25GBASE-AU, and 50GBASE-AU. (See IEEE Std 802.3, Clause 166.)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change definition to read as:
"BASE-AU: The set of PHYs that use a BASE-U PCS and PMA with PMD specifications for operation over optical fiber in the automotive environment, including 2.5GBASE-AU, 5GBASE-AU, 10GBASE-AU, 25GBASE-AU, and 50GBASE-AU. (See IEEE Std 802.3, Clause 166.)"

Cl **1** *SC* **1.4.206a** *P* **21** *L* **11** # 52

Grow,Robert RMG Consulting

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

Though not as bad as the BASE-AU definition, this one also is a bit circular as written.

SuggestedRemedy

BASE-U: IEEE 802.3 PCS and PMA sublayer specifications used by a family of Physical Layer devices. (See IEEE Std 802.3, Clause 166.)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.4.464** *P* **21** *L* **16** # 53

Grow,Robert RMG Consulting

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

Though existing text, "Side information block" is a bit difficult to understand.

SuggestedRemedy

Replace with "An information block".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.5** *P* **21** *L* **24** # 260

Ran, Adee Cisco

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

The Ethernet standard has numerous specifications of scramblers that do not use the acronym LFSR at all. It is preferable to avoid adding new acronyms where existing language is established.

Also, the usage of the term LFSR in the text is not expanded anywhere in this draft (if it is used, it should be expanded at least in the first occurrence in any clause or annex).

SuggestedRemedy

Delete the acronym, and use the term "linear feedback shift register" in the few cases where it is required (some existing places should be changed to "polynomial", "scrambler" or "descrambler", subject of other comments).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.3.2.1.2** *P* **22** *L* **21** # 54

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Per P802.3/D3.2, the end of the 1000BASE items is 1000BASE-X.

SuggestedRemedy

…after the entry for "1000BASE-X" …

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.3.2.1.2** *P* **22** *L* **31** # 55

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Per P802.3/D3.2, the start of 10GBASE list is after "10/1GBASE-PRX". P802.3cs is inserting 10/2.5GBASE-SP (though P802.3cs/D3.2 specifies the wrong insert point, a comment has been submitted to fix this).

SuggestedRemedy

…after the entry for "10/2.5GBASE-SP" (inserted by IEEE Std 802.3cs-202x) as follows:

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.3.2.1.2** *P* **22** *L* **36** # 56

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Per P802.3/D3.2, the start of 25GBASE list is after "25/10GBASE-PQ".

SuggestedRemedy

…after the entry for "25/10GBASE-SP" …

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.3.2.1.2** *P* **22** *L* **41** # 57

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Per P802.3/D3.2, the start of the 50GBASE list is after "50/25GBASE-PQ"

SuggestedRemedy

…after the entry for "50/25GBASE-PQ" …

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.3.2.1.3** *P* **22** *L* **48** # 58

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Per P802.3/D3.2, the end of the 1000BASE items is 1000BASE-X.

SuggestedRemedy

…after the entry for "1000BASE-X" …

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.3.2.1.3** *P* **23** *L* **7** # 59

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Per P802.3/D3.2, the start of 10GBASE list is after "10/1GBASE-PRX". P802.3cs is inserting 10/2.5GBASE-SP (though P802.3cs/D3.2 specifies the wrong insert point, a comment has been submitted to fix this).

SuggestedRemedy

…after the entry for "10/2.5GBASE-SP" (inserted by IEEE Std 802.3cs-202x) as follows:

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.3.2.1.3** *P* **23** *L* **12** # 60

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Per P802.3/D3.2, the start of 25GBASE list is after "25/10GBASE-PQ".

SuggestedRemedy

…after the entry for "25/10GBASE-SP" …

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.3.2.1.3** *P* **23** *L* **17** # 61

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Per P802.3/D3.2, the start of the 50GBASE list is after "50/25GBASE-PQ"

SuggestedRemedy

…after the entry for "50/25GBASE-PQ" …

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.5.1.1.2** *P* **23** *L* **39** # 62

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Per P802.3/D3.2, the end of the 1000BASE items is 1000BASE-XHD.

SuggestedRemedy

…after the entry for "1000BASE-XHD" …

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.5.1.1.2** *P* **23** *L* **48** # 63

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Per P802.3/D3.2, the start of 10GBASE list is after "10/1GBASE-PRX-U4". P802.3cs is inserting 10/2.5GBASE-SP1-Dx and 10/2.5GBASE-SP1-Uxy (though P802.3cs/D3.2 specifies the wrong insert point, a comment will be submitted to fix this).

SuggestedRemedy

…after the entry for "10/2.5GBASE-SP1-Uxy" (inserted by IEEE Std 802.3cs-202x) as follows:

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.5.1.1.2** *P* **24** *L* **2** # 64

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Per P802.3/D3.2, the start of 25GBASE list is after "25/10GBASE-PQX-U3".

SuggestedRemedy

…after the entry for "25/10GBASE-PQX-U3" …

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.5.1.1.2** *P* **24** *L* **6** # 65

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Per P802.3/D3.2, the start of the 50GBASE list is after "50/25GBASE-PQX-U3"

SuggestedRemedy

…after the entry for "50/25GBASE-PQX-U3" …

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **44** *SC* **44.1.1** *P* **25** *L* **19** # 223

Lewis, Jon Dell Technologies

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

During the edit the text was changed from "Physical Layer entities" to "Physical Layers". I think this should be "Physical Layer entities"

SuggestedRemedy

Change end of first sentence to "… one of a number of 10 Gb/s Physical Layer entities."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **44** *SC* **44.1.1** *P* **25** *L* **19** # 66

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

P802.3 balloting has changed the base text ("entities" replaced with "devices (PHYs)". Our edits also are incorrect (the XGMII is part of the Physical Layer) so entities/devices should not have been struck through.

SuggestedRemedy

10 Gigabit Ethernet uses the IEEE 802.3 MAC sublayer, connected through a 10 Gigabit Media Independent Interface (XGMII) to <start underscore>one of a number of <end underscore>10 Gb/s Physical Layer devices (PHYs) <start strikethrogh> such as 10GBASE-SR, 10GBASE-LX4, 10GBASE-CX4, 10GBASE-LRM, 10GBASE-LR, 10GBASE-ER, 10GBASE-SW, 10GBASE-LW, 10GBASE-EW, 10GBASE-T, and 10GBASE-T1<end strikethrough>.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **44** *SC* **44.1.1** *P* **25** *L* **19** # 261

Ran, Adee Cisco

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

The change in this subclause removes a list of PHYs which has become lengthy. That is arguable - indeed maintaining lists is an editorial burden, but then, this is an introduction clause, and knowing which PHYs it pertains to is valuable information which should be provided as early as possible.

If the list is indeed removed, the resulting text as of this draft becomes:
"10 Gigabit Ethernet uses the IEEE 802.3 MAC sublayer, connected through a 10 Gigabit Media Independent Interface (XGMII) to one of a number of 10 Gb/s Physical Layers"
"one of a number" is just too wordy, and does not even indicate that these Physical layers are defined in this standard.

A reference to Table 44–1 would provide the necessary list.

SuggestedRemedy

Change "one of a number of 10 Gb/s Physical Layers" to "one of the 10 Gb/s Physical Layers specified in this standard (see Table 44–1).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **44** *SC* **44.1.2** *P* **25** *L* **27** # 262

Ran, Adee Cisco

Comment Type **T** *Comment Status* **D** *Text improvement*

"Support operation over optical fiber for use in automotive applications" had not been an objective of clause 44 when it was written. Adding it now is arguably changing history, and has no benefit for readers. Since recent clauses do not include "objectives" clauses at all, there is no need to maintain or modify objectives in older clauses.

There are other media that are supported by clause 44 and are not listed here, such as coax (clause 100). Also, other introduction clauses modified by this draft do not include "objectives".

SuggestedRemedy

Delete the editorial instruction and change of 44.1.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **44** *SC* **44.1.4.4** *P* **28** *L* **9** # 67

Grow,Robert RMG Consulting

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

Base text error.

SuggestedRemedy

The strikethrough "and" belongs after "Clause 68,".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **29** *L* **25** # 68

Grow,Robert RMG Consulting

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

Change marking error/inconsistency. Make style of change marking the same on rows 25 and 38.

SuggestedRemedy

Delete the comma and space after "1.72, " also "1.73" should be underlined. Make line 38 consistent -- strikethrough 1.901 followed by underline 1.902.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **29** *L* **25** # 16

Hajduczenia, Marek Charter Communications

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

Wrong editorial markup in Table 45–3. "1.73" should be underlined, also no nedd for preceding ","
Wrong editorial markup in Table 45–3. "902" should be underlined.
There are two Table 45-3 instances.

SuggestedRemedy

Please fix the editorial issues

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.158a.1** *P* **31** *L* **27** # 137

Pérez-Aranda, Rubén KDPOF

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

Indication of 10GBASE-AU encoding is not consistent with others.

SuggestedRemedy

Change "When these bits are set to 0010, the mode of operation is 10GBASE-AU" with "When these bits are set to 0b0010, the mode of operation is 10GBASE-AU"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.87c** *P* **35** *L* **35** # 138

Pérez-Aranda, Rubén KDPOF

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

Test pattern for stressed receiver sensitivity measurement is not a valid test pattern for a PHY. This test pattern is intended to be generated by an external test equipment calibrated to generate a signal conditioned for receiver stressed sensitivity.

SuggestedRemedy

Remove 1 1 0 assignment of table 45–313c

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.87c** *P* **37** *L* **32** # 285

Torres, Luisma KDPOF

Comment Type **E** *Comment Status* **D** *OAM capability*

The functionality of the register is about the capability of the remote BASE-U OAM, understood as the OAM ability of the remote node AND that such ability is enabled.

SuggestedRemedy

Replace "ability" with "capability" in the "Name" column"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Replace "ability" with "advertisement" in the "Name" column", in line with the meaning used in 45.2.1.245.5.

Capability is used in other 802.3 subclauses as a synonym for ability (i.e., bit 7.33.5 and 7.33.4).

Substitute in the "Name" column of Table 45-313c (p.35 l.45) "BASE-U OAM enable" by "BASE-U OAM advertisement enable"

Substitute in the "Description" column of Table 45-313c (p.35 l.45-46) "Enable BASE-U OAM functionality" by "Enable advertisement of BASE-U OAM ability" and "Disable BASE-U OAM functionality" by "Disable advertisement of BASE-U OAM ability"

Replace (p36 l.20) "BASE-U OAM enable" with "BASE-U OAM advertisement enable"

Add the following clarifiying text explaining how OAM capability is enabled in (p.134 l.53): "BASE-U OAM capability shall be enabled when the field PHD.CAP.OAM (see Table 166-2) of both, the transmitted and received PHD, are equal to 1."

Add PICS accordingly.

Replace p.36 l.25 "Changes in a BASE-U OAM enable" with "Changes in a BASE-U OAM advertisement enable"

Cl **45** *SC* **45.2.3.87c** *P* **37** *L* **35** # 286

Torres, Luisma KDPOF

Comment Type **E** *Comment Status* **D** *EEE capability*

The functionality of the register is about the capability of the remote BASE-U EEE, understood as the EEE ability of the remote node AND that such ability is enabled.

SuggestedRemedy

Replace "ability" by "capability" in the "Name" column"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Replace "ability" with "advertisement" in the "Name" column", in line with the meaning used in 45.2.1.245.5.

Capability is used in other 802.3 subclauses as a synonym for ability (i.e., bit 7.33.5 and 7.33.4).

Substitute in the "Name" column of Table 45-313c (p.35 l.47) "EEE enable" with "EEE advertisement enable"

Substitute in the "Description" column of Table 45-313c (p.35 l.47-48) "Enable LPI mode" with "Enable advertisement of EEE ability" and "Disable LPI mode" with "Disable advertisement of EEE ability"

Replace (p.36 l.30) "Setting bit 3.2348.0 to one shall enable BASE-U PHY EEE capability (see 166.4)." with "Setting bit 3.2348.0 to one shall enable the advertisement of local PHY EEE capability (see 166.4)."

Replace (p.36 l.28 and l.32) "EEE enable" with "EEE advertisement enable".

Cl **45** *SC* **45.2.3.87c.1** *P* **36** *L* **3** # 238

Slavick, Jeff Broadcom

Comment Type **T** *Comment Status* **D** *Text improvement*

Overly wordy description of the field. Updated the sub-clause desciption to be more succinct

SuggestedRemedy

Bits 3.2348.15:13 shall have a default value of 0b000, selecting normal BASE-U PCS operation. Selection of the BASE-U PCS test mode patterns described in 166.5 are mapped per Table 45-313c.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.87c.1** *P* **36** *L* **3** # 283

Pérez-Aranda, Rubén KDPOF

Comment Type **TR** *Comment Status* **D** *Registers effect*

It is expected that any realistic implementation of a 802.3cz compliant PHY will require a reset before change of the operation mode configuration takes effect in the HW. This is specified for the case of BER test mode in subclause 166.5.1, however, requirement of reset is not specified for the other operation modes corresponding to the test patterns used in for PMD testing.

SuggestedRemedy

Add at the end of the subclause (line 12): “Changes in operation mode value shall only take effect after a PMA reset (see 166.3.4.1)”. Remove “The operating mode of the transmitter is encoded in the field PHD.TX.NEXT.MODE and selected at PMA reset, and does not change unless a PMA reset takes place. “ from 166.5.1 (page 108, lines 22 and 23).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.87c.1** *P* **36** *L* **11** # 139

Pérez-Aranda, Rubén KDPOF

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

Test pattern for stressed receiver sensitivity measurement is not a valid test pattern for a PHY. This test pattern is intended to be generated by an external test equipment calibrated to generate a signal conditioned for receiver stressed sensitivity.

SuggestedRemedy

Remove "A value 0b110 in bits 3.2348.15:13 shall select the test pattern for stressed receiver sensitivity measurement transmission as specified in Table 45–313c with behavior as specified in 166.5.6.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.87c.2** *P* **36** *L* **16** # 284

Pérez-Aranda, Rubén KDPOF

Comment Type **TR** *Comment Status* **D** *Registers effect*

It is expected that any realistic implementation of a 802.3cz compliant PHY will require a reset before change of the loopback mode configuration takes effect in the HW.

SuggestedRemedy

Add at the end of the subclause (line 18): “Changes in loopback mode value shall only take effect after a PMA reset (see 166.3.4.1)”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.87c.2** *P* **36** *L* **18** # 140

Pérez-Aranda, Rubén KDPOF

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

Value assignation not consistent with number of bits

SuggestedRemedy

Change "0b00 is selected in 3.2348.15:13” with “0b000 is selected in 3.2348.15:13”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.87c.2** *P* **36** *L* **18** # 239

Slavick, Jeff Broadcom

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

Short a 0.

SuggestedRemedy

Updated the 0b00 to 0b000 inside the paranthesis of the last sentence.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.87c.3** *P* **36** *L* **20** # 242

Slavick, Jeff Broadcom

Comment Type **TR** *Comment Status* **D** *Registers effect*

There is no reflection of what the current operating mode of OAM. 3.2348.1 only takes affect after a pmd_reset, so how do you tell if the current state of the enable bit represents the opereation state?

SuggestedRemedy

Add a new BASE-U OAM status field that reflects the current operating state of OAM mode.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
According to 166.11 (with references to 115.9), BASE-U OAM channel is established when both link partners transmits PHD.CAP.OAM = 1, which indicates both partners have the optional ability of OAM channel and it is enabled. The status of the PHD operation is reported to any attached STA by the PHD lock status bit (3.2349.10) and the local and remote PHD reception status bits (3.2349.11 and 3.2349.12). Once the PHD bidirectional communication is indicated reliable, register BASE-U OAM enable (3.2348.1) and Remote BASE-U OAM ability (3.2349.3) can be used to determine the OAM is operative. If both registers value 1, then bidirectional OAM communication is operative.
The attached STA may change the register BASE-U OAM enable (3.2348.1) without PMA reset. In such a case, the read values of the register does not longer reflect current status of OAM channel. However, in this case, it is responsibility of the STA to maintain consistency of operations through write operations to the MDIO registers.

Cl **45** *SC* **45.2.3.87c.3** *P* **36** *L* **23** # 240

Slavick, Jeff — Broadcom

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

The BASE-U OAM ability reference should be to its sub-clause

SuggestedRemedy

Change "bit 3.2349.1 = 0, see Table 45-313d" to "see 45.2.3.87d.13"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.87c.4** *P* **36** *L* **28** # 243

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **D** *Registers effect*

There is no reflection of what the current operating mode of EEE. 3.2348.0 only takes affect after a pmd_reset, so how do you tell if the current state of the enable bit represents the operation state?

SuggestedRemedy

Add a new BASE-U EEE status field that relfects the current operating state of EEE mode.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
EEE capability is managed in MDIO with registers parallel to those used to manage BASE-U OAM. See response to comment #242.

Cl **45** *SC* **45.2.3.87c.4** *P* **36** *L* **32** # 241

Slavick, Jeff — Broadcom

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

The EEE ability reference should be to its sub-clause

SuggestedRemedy

Change "bit 3.2349.0 = 0, see Table 45-313d" to "see 45.2.3.87d.14"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.87d.11** *P* **38** *L* **32,34** # 287

Torres, Luisma — KDPOF

Comment Type **E** *Comment Status* **D** *OAM capability*

The functionality of the register is about the capability of the remote BASE-U OAM, understood as the OAM ability of the remote node AND that such ability is enabled.

SuggestedRemedy

Replace "ability" with "capability". Also in line 34.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Replace "ability" with "advertisement" in line 32 and 34.

Replace paragraph starting at l.34 with "Bit 3.2349.3 indicates the BASE-U OAM ability of the remote PHY received in the PHD field PHD.CAP.OAM (see Table 166–2). When read as one, bit 3.2349.3 indicates both that the remote PHY has BASE-U OAM ability and that the BASE-U OAM advertisement is enabled. When read as zero, bit 3.2349.3 indicates either that the remote PHY does not have BASE-U OAM ability or that BASE-U OAM advertisement is disabled."

Cl **45** *SC* **45.2.3.87d.12** *P* **38** *L* **39** # 288

Torres, Luisma — KDPOF

Comment Type **E** *Comment Status* **D** *EEE capability*

The functionality of the register is about the capability of the remote BASE-U EEE, understood as the EEE ability of the remote node AND that such ability is enabled.

SuggestedRemedy

Replace "ability" by "capability". Also in line 41

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Replace "ability" with "advertisement".

Replace the paragraph beginning at l.41 with "Bit 3.2349.2 indicates the EEE ability of the remote PHY received in the PHD field PHD.CAP.LPI (see Table 166–2). When read as one, bit 3.2349.2 indicates both that the remote PHY has the EEE ability and that the EEE advertisement is enabled. When read as zero, bit 3.2349.2 indicates either that the remote PHY does not have the EEE ability or that the EEE advertisement is disabled."

Cl **45** *SC* **45.2.3.87g** *P* **39** *L* **51** # 141

Pérez-Aranda, Rubén KDPOF

Comment Type **ER** *Comment Status* **D** *IEEE-SA Style*

Definition of BER test mode counter bits should be in a sub-section “45.2.3.87g.1 BER test mode counter (3.2352.15:0)”

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

2021 IEEE SA Standards Style Manual (p.24):
"Clauses and subclauses should be divided into further subclauses only when there is more than one subclause. For example, Clause 1 should not have a 1.1 unless there is also a 1.2."

Cl **45** *SC* **45.2.3.87h** *P* **40** *L* **27** # 142

Pérez-Aranda, Rubén KDPOF

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

Definition of RS-FEC codeword error counter bits should be in a sub-section “45.2.3.87h.1 RS-FEC codeword error counter (3.2353.15:0)”

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **78** *SC* **78.1.4** *P* **44** *L* **16** # 69

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

I think Table 78- 1 is arranged per P802.3/D3.0 comment # I-52. (A resolution I remain unhapy with, because I do not for example know for sure where to insert 25GBASE-AU and 50GBASE-AU.) This resolution requires an adjustment to insert points.
1. Increasing speed.
2. Increasing reach (maximum supported distance over the medium).
3. Decreasing number of lanes
The following supplemental rules address are included to address special cases
4. PHY "family designations, by convention, are assigned a reach of 0
5. "Copper" PHYs precede "Fiber" PHYs (all else being equal)
6. Alphanumeric sort (all else being equal)

SuggestedRemedy

I'm guessing on 25GBASE-AU and 50GBASE-AU but ...Insert a row for 2.5GBASE-AU after 2.5GBASE-T1, insert a row for 5GBASE-AU after 5GBASE-T1, insert a row for 10GBASE-AU after XGXS (XAUI), insert a row for 25GBASE-AU after 25GBASE-KR, and insert a row for 50GBASE-AU after 40GBASE-T in Table 78–1 as follows (unchanged rows not shown):

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Follow P802.3/D3.0 comment # I-52:
1. Increasing speed.
2. Increasing reach (maximum supported distance over the medium).
3. Decreasing number of lanes
The following supplemental rules address are included to address special cases
4. PHY "family designations, by convention, are assigned a reach of 0
5. "Copper" PHYs precede "Fiber" PHYs (all else being equal)
6. Alphanumeric sort (all else being equal)

Replace with "Insert a row for 2.5GBASE-AU after 2.5GBASE-T1, insert a row for 5GBASE-AU after 5GBASE-T1, insert a row for 10GBASE-AU after 10GBASE-T1, insert a row for 25GBASE-AU after 25GBASE-KR, and insert a row for 50GBASE-AU after 50GBASE-KR in Table 78–1 as follows (unchanged rows not shown):"

Cl **78** *SC* **78.1.4** *P* **44** *L* **48** # 70

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

I think Table 78- 5 is also arranged per P802.3/D3.0 comment # I-52.

SuggestedRemedy

I'm guessing on 25GBASE-AU and 50GBASE-AU but ...Insert a row for 2.5GBASE-AU after 2.5GBASE-T1, insert a row for 5GBASE-AU after 5GBASE-T1, insert a row for 10GBASE-AU after XGXS (XAUI), insert a row for 25GBASE-AU after 25GAU, and insert a row for 50GBASE-AU after 50GBASE-KR in Table 78–1 as follows (unchanged rows not shown):

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace with "Insert a row for 2.5GBASE-AU after 2.5GBASE-T1, insert a row for 5GBASE-AU after 5GBASE-T1, insert a row for 10GBASE-AU after 10GBASE-T1, insert a row for 25GBASE-AU after 25GBASE-KR, and insert a row for 50GBASE-AU after 50GBASE-KR in Table 78–1 as follows (unchanged rows not shown):"

Cl **78** *SC* **78.5** *P* **45** *L* **9** # 263

Ran, Adee Cisco

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

In Table 78-4, the new AU PHY types are intended to support only fast wake LPI, similar to all other PHYs over optical media.

The existing PHYs in table 78-4 which use fast wake are listed as "fast wake": 25GBASE-R fast wake, 40GBASE-R fast wake, 50GBASE-R fast wake, 100GBASE-R fast wake, 200GBASE-R fast wake, and 400GBASE-R fast wake.

SuggestedRemedy

Add "fast wake" in the "PHY or interface type" column of the new PHYs.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **105** *SC* **105** *P* **46** *L* **10** # 71

Grow,Robert RMG Consulting

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

Unless P802.3cz is assigned an amendment number, it might be helpful to add to the note because of the significant overlap in things edited by P802.3cy and P802.3cz.

SuggestedRemedy

Add: Please note that P802.3cy also modifies clause 105 in similar locations to those below. This draft assumes P802.3cz will preceed P802.3cy in amendment order.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **105** *SC* **105.5** *P* **50** *L* **12** # 76

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

It isn't clear what the sort order is for Table 105-3.

SuggestedRemedy

No change recommended, editor's guess is as good as mine unless someone else knows the sort order.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **105** *SC* **105.5** *P* **50** *L* **42** # 248

Nicholl, Shawn AMD

Comment Type **TR** *Comment Status* **D** *RS-FEC*

In Table 105-3 "Sublayer delay constraints", the 25GBASE-AU PHY sublayer has maximum delay of 11 264 bit time. This includes contributions from PCS, FEC, PMA, and PMD. In contrast, the same table lists 24 576 bit time as the sublayer maximum delay for just the 25GBASE-R RS-FEC alone.

SuggestedRemedy

Propose to update the 25GBASE-AU PHY sublayer delay to a higher value to allow flexibility in the implementation. Propose a value of 32768 bit time (64 pause_quanta) based on a sum of the 25GBASE-R PCS (3584 BT), 25GBASE-R RS-FEC (24576 BT), 25GBASE-R PMA (4096 BT), and 25GASE-*R PMD (512 BT).

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Delay is specified 25GMII to 25GMII. It considers sum of delays for TX and RX sides of PCS, PMA and PMD sublayers, without including propagation delay of the fiber medium. 11264 bit times corresponds to 2.2x the time needed to transmit a RS-FEC code-word (544 RS symbols, 5440 bits). This upper bound limit has been specified with >25% margin considering actual implementation in a technology node qualified for automotive application.

Cl **105** *SC* **105.1.1** *P* **46** *L* **19** # 2

Brown, Matt — Huawei

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

Allthough I support removing the long list of PMD types the wording is a bit odd. Consider sticking with precedence and use the relevant paragraph for 50 Gb/s Ethernet in Clause 131 and 200/400 Gb/s Ethernet in Clause 116.

SuggestedRemedy

Change the first paragraph to: "25 Gigabit Ethernet uses the IEEE 802.3 MAC sublayer operating at a data rate of 25 Gb/s, coupled with any IEEE 802.3 25GBASE Physical Layer implementation."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **105** *SC* **105.1.1** *P* **46** *L* **19** # 264

Ran, Adee — Cisco

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

The change in this subclause removes a list of PHYs which has become lengthy. That is arguable - indeed maintaining lists is an editorial burden, but then, this is an introduction clause, and knowing which PHYs it pertains to is valuable information which should be provided as early as possible.

If the list is indeed removed, the resulting text as of this draft becomes:
"25 Gigabit Ethernet uses the IEEE 802.3 MAC sublayer, connected through a 25 Gigabit Media Independent Interface (25GMII) to one of a number of 25 Gb/s Physical Layers"
"one of a number" is just too wordy, and does not even indicate that these Physical layers are defined in this standard.

A reference to Table 105–2 would provide the necessary list.

SuggestedRemedy

Change "one of a number of 25 Gb/s Physical Layers" to "one of the 25 Gb/s Physical Layers specified in this standard (see Table 105–2).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **105** *SC* **105.1.1** *P* **46** *L* **19** # 222

Lewis, Jon — Dell Technologies

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

During the edit the text was changed from "Physical Layer entities" to "Physical Layers". I think this should be "Physical Layer entities"

SuggestedRemedy

Change end of first sentence to "… one of a number of 25 Gb/s Physical Layer entities."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **105** *SC* **105.1.3** *P* **48** *L* **8** # 72

Grow,Robert — RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Base text error. Table 105-1 has been resorted in P802.3/D3.2.

SuggestedRemedy

Use base text from P802.3/D3.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **105** *SC* **105.1.3** *P* **48** *L* **27** # 73

Grow,Robert — RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Again, using the P802.3 comment resolution for # I-52 sort order the insert point is I think defined by comment # I-52 resolution.

SuggestedRemedy

I'm mostly guessing the insert point is after 25GBASE-KR of the P802.3/D3.2 table.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Substitute Table 105-1 with the one in P802.3/D3.2.

The insert point is after 25GBASE-KR.

Cl **105** *SC* **105.1.3** *P* **48** *L* **27** # 3

Brown, Matt — Huawei

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

The order of PHYs in Table 105-1 is not in line with the base standard. When properly ordered 25GBASE-AU would be just above 25GBASE-SR.

SuggestedRemedy

Reorder the PHYs in Table 105-1 in line with the base standard and established convention.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See #73.

Cl **105** *SC* **105.1.3** *P* **49** *L* **4** # 75

Grow,Robert — RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Again, using the P802.3 comment resolution for # I-52 sort order the insert point is I think defined by comment # I-52 resolution.

SuggestedRemedy

I'm mostly guessing the insert point is after 25GBASE-KR of the P802.3/D3.2 table.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Substitute Table 105-2 with the one in P802.3/D3.2.

The insert point is after 25GBASE-KR.

Cl **105** *SC* **105.1.3** *P* **105** *L* **8** # 17

Hajduczenia, Marek — Charter Communications

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

Table 105-1 shows inserted row but also includes unchanged rows
Table 105-2 shows inserted columns but also includes unchanged columns

SuggestedRemedy

Delete unchanged rows from Table 105-1 and unchanged columsn from Table 105-2, and any other tables that contain unchanged rows/columns - they are not needed. Update the editorial instructions accordingly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **105** *SC* **105.2** *P* **49** *L* **5** # 265

Ran, Adee — Cisco

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

Table 105-2 looks wider than the usual text boundaries. Its columns can be narrowed to make it fit the boundaries as in all other tables.

Similarly in Table 125-2 (page 55), and possibly other tables in this draft.

SuggestedRemedy

Change column widths in all tables that exceed the boundaries as necessary.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **105** *SC* **105.2** *P* **49** *L* **6** # 4

Brown, Matt — Huawei

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

Table 105-2 extended beyond the text boundaries on left and right.

SuggestedRemedy

Reduce the the column widths so that the table falls withing the text boundaries (outside of the margins).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **105** *SC* **105.2** *P* **49** *L* **20** # 5

Brown, Matt — Huawei

Comment Type **E** *Comment Status* **X** *P802.3/D3.2 alignement*

The order of PHYs in Table 105-2 is not in line with the base standard. When properly ordered 25GBASE-AU would be just above 25GBASE-SR.

SuggestedRemedy

Reorder the PHYs in Table 105-2 in line with the base standard and established convention.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See #75.

Cl **105** *SC* **105.2** *P* **49** *L* **4** # 74

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Base text error. Table 105-2 has been resorted in P802.3/D3.2.

SuggestedRemedy

Use base text from P802.3/D3.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **125** *SC* **125.3** *P* **56** *L* **15** # 80

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Again, if using illuminati sort order, I think T1 goes before T because of reach, so I don't understand the order of Table 125-3 in P802.3/D3.2.

SuggestedRemedy

No change recommended, unless someone else knows better than I. I think the insert point would still be after T1 because of reach. .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **125** *SC* **125.3** *P* **56** *L* **27** # 79

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Base text error. Table 125-3 has been resorted in P802.3/D3.2 (5GBASE-R moved).

SuggestedRemedy

Use base text from P802.3/D3.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **125** *SC* **125.1.4** *P* **54** *L* **5** # 77

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

This table in P802.3/D3.2 appears to me to be in rate then alphanumeric order. I think the illuminati order would put T1 before T because of increasing reach.

SuggestedRemedy

No change recommended, unless someone else knows better than I. I think the insert point would still be after T1 because of reach.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **125** *SC* **125.1.4** *P* **55** *L* **4** # 78

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

This table in P802.3/D3.2 appears to me to be in rate then alphanumeric order. I think the illuminati order would put T1 before T because of increasing reach.

SuggestedRemedy

No change recommended, unless someone else knows better than I. I think the insert point would still be after T1 because of reach.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **131** *SC* **131.1.3** *P* **58** *L* **32** # 131

Pérez-Aranda, Rubén KDPOF

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

64/65B is not correct encoding (Table 131-1)

SuggestedRemedy

Replace "50 Gb/s PHY using 64/65B and Reed-Solomon encoding" with "50 Gb/s PHY using 64B/65B and Reed-Solomon encoding"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **131** *SC* **131.1.3** *P* **58** *L* **32** # 81

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Using illuminati sort order, our reach puts AU higher in the table.

SuggestedRemedy

Not sure of CR reach but our reach would put AU either before or after CR.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Insertion point after 50GBASE-KR and before 50BASE-CR because the reach.

Cl **131** *SC* **131.2.4** *P* **59** *L* **24** # 82

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **D** *P802.3/D3.2 alignement*

Using illuminati sort order, our reach puts AU higher in the table unless the sort order is simply to put the "M"s in a diagional line (clause order).

SuggestedRemedy

Not sure of all reaches in the table, but think we go first.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The insertion point is before 50GBASE-SR if ordered taking into account reach criteria.

Cl **131** *SC* **131.4** *P* **60** *L* **24** # 83

Grow,Robert RMG Consulting

Comment Type **E** *Comment Status* **X** *P802.3/D3.2 alignement*

Using illuminati sort order, our reach puts AU higher in the table.

SuggestedRemedy

Not sure of CR reach but our reach would put AU either before or after CR.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The insertion point is before 50GBASE-CR if ordered taking into account reach criteria.

Cl **166** *SC* **166.13** *P* **136** *L* **15** # 202

Pérez-Aranda, Rubén KDPOF

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

Add two rows to Table 166–21 to include mapping of pcs_reset variable.

SuggestedRemedy

Add row, “Reset = 1, PCS control 1, 3.0.15, pcs_reset = TRUE”. Add row “Reset = 0, PCS control 1, 3.0.15, pcs_reset = FALSE”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.15** *P* **138** *L* **42** # 249

Nicholl, Shawn AMD

Comment Type **TR** *Comment Status* **D** *RS-FEC*

Update Table 166-23 "Delay constraints) pending resolution of comment against Table 105-3 "Sublayer delay constraints".

SuggestedRemedy

If 25GBASE-AU delay contraints is updated in Table 105-3, then make corresponding update in Table 166-23 for 25GBASE-AU. In addition, to retain identical delay constraint for all PHY in Table 166-23, then update other PHY rows to match the new 25GBASE-AU delay constraint value.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
See #248.

Cl **166** *SC* **166.1** *P* **61** *L* **18** # 266

Ran, Adee Cisco

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

This amendment adds PHYs for optical media for Automotive applications. There are existing PHYs for optical media, which use existing BASE-R sublayers (different per data rate), notably, existing PCSs, FECs, and PMAs. PHYs for a given data rate only differ in their PMD sublayer (because this is the Physical Medium Dependent part).

As an example, the 25 Gb/s PHY specified in clause 112 uses NRZ signaling and a single-lane Reed-Solomon error correction code over optical media, which are practically the same functions as several PHYs in clause 166 (at the same speed or lower). Other FEC codes are defined in the BASE-R family which can be used instead if higher or lower coding gain is required.

It is unclear why the new PHYs, which are indeed for different media, should have completely different sublayer stacks, terminology, phrasing, and methodology, instead of re-using the existing BASE-R sublayers and just defining new PMDs, and why they need to be defined as a new "family". The overhead created in this draft by this choice is significant, and the implications of "re-inventing the wheel" need not be listed. The Ethernet standard is already comprehensive enough and should not include multiple solutions to the same problem. The new PHYs defined in this draft do not look like Ethernet to me.

Other aspects of Ethernet such as delay assessments for timestamping (clause 90, currently amended by P802.3cx) are intricately dependent on PHY sublayers and may need to be addressed by this amendment if new sublayers are used.

If there is a reason for defining a new family of PHYs which are so different from existing ones, it should be stated in the introduction to Clause 166. If there isn't a strong reason, this project should re-use the existing Ethernet sublayer stack for each of the PHYs, or diverge from the Ethernet standard to some other working group.

SuggestedRemedy

Preferably, change all PHYs to use existing sublayer stacks and use Clause 166 to define only the new PMDs. Implement necessary changes across the draft.

If this is not done, create an introduction to clause 166 in 166.1 (making the existing "overview" a level 2 subclause) and explain to the readers how and why this family is different from other optical PHYs.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This amendment adds PHYs for optical media for automotive applications consistent with the project's objectives. The project was approved with objectives of defining PHYs, but not only PMDs, taking in consideration specific implementation, cost and environmental requirements of the targeted application (e.g. temperature range between -40ºC and +125ºC, number of inline connections, aging, vibrations, reliability mission profiles, standard pick-and-place and reflow assembly process, OAM channel, etc.). All of these requirements were considered in the link model, link budget analysis, and communications system design, resulting in a solution that is suitable and meet all the objectives.
Specifications of 10GBASE-AU PHYs have to support up to 10 dB insertion loss, 25GBASE-AU PHYs 8 dB, and 50GBASE-AU PHYs 4 dB, under any operation condition, and with margin for the implementers.
The TF selected 980nm wavelength that allows to meet with margin the reliability mission profile and improve the performance in extreme temperatures compared with 850nm.
However, even if performance is improved with 980nm, signal integrity distortion produced by optoelectronics operating in extreme temperatures needs to be compensated by the receiver. This task is specially difficult in operation conditions near to the receiver sensitivity point. Therefore, the transmit block, RS-FEC and state diagrams are intentionally designed to allow advance data-aided MMSE symbol synchronization, timing recovery and equalization with short link time.
In addition, the transmit block structure has preallocated time slots where PHY control and status information is transported together the OAM information (special requirement of automotive application).
The test methods specified has been designed and specified taking into consideration (but not limiting) the most suitable implementation of BASE-AU PHYs. A clear example of this is the specification of the reference receiver and TDFOM figure of merit based on MMSE equalization.
All these arguments are extensively covered in a plurality of contributions to the P802.3cz task force.
Regarding to the comment about clause 90, PHYs specified in clause 166 are no more and no less compatible than any other BASE-R based PHY, because they are defined at the same media independent interfaces and BASE-R PCS encoding/decoding state diagrams have been used as baseline (but reducing 1 bit, 64B/65B instead of 64B/66B).
In the subclause 166.1 is stated: "The 2.5GBASE-AU, 5GBASE-AU, 10GBASE-AU, 25GBASE-AU, and 50GBASE-AU PHYs are specified to support operation in automotive applications. The link segment specifications were derived from automotive requirements, but may also be used for non-automotive applications". Additional justifications would be odd with introductory sections along IEEE 802.3.

Cl **166** *SC* **166.1.4** *P* **63** *L* **33** # 244

Dawe, Piers Nvidia

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

fiber.The

SuggestedRemedy

fiber. The

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.1.4** *P* **63** *L* **34** # 246

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *IEEE-SA Style*

TX, RX

SuggestedRemedy

For consistency with most of 802.3, probably should be Tx and Rx

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.1.4** *P* **63** *L* **34** # 245

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *Text improvement*

the link partnercable

SuggestedRemedy

the medium OR the fiber optic cabling

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Replace "the link partnercable" with "the link partner using the fiber optic cabling"

Cl **166** *SC* **166.1.4** *P* **63** *L* **34** # 271

Thomas, Huber Intel

Comment Type **E** *Comment Status* **D** *Text improvement*

Typographical error - partnercable

SuggestedRemedy

Split into two words, partner cable.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See #245.

Cl **166** *SC* **166.1.4** *P* **63** *L* **34** # 225

Martino, Kjersti Inneos

Comment Type **E** *Comment Status* **D** *Text improvement*

Typo - missing space in "partnercable"

SuggestedRemedy

"partner cable"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Replace "the link partnercable" with "the link partner using the fiber optic cabling"

Cl **166** *SC* **166.1.4** *P* **63** *L* **34** # 144

Pérez-Aranda, Rubén KDPOF

Comment Type **ER** *Comment Status* **D** *Text improvement*

Replace "The local PMD transmitter and PMD receiver are connected to the link partnercable" with "The local PMD transmitter and PMD receiver are connected to the link partner using duplex optical cable"

SuggestedRemedy

Per comment. Other remedy may also valid.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See #245.

Cl **166** *SC* **166.1.4** *P* **64** *L* **3** # 145

Pérez-Aranda, Rubén KDPOF

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

Incorrect reference.

SuggestedRemedy

Replace "(see 166.2.2.9)" with "(see 166.2.2.8)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.1.4** *P* **64** *L* **14** # 267

Ran, Adee Cisco

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

"The scrambler uses an LFSR" - not necessarily; and what is an LFSR anyway? (no reference to the expansion of the acronym)

An LFSR is one implementation of a generator of the scrambler sequence; other implementations that generate the same sequence may be used (e.g. parallel implementations, or a block of memory).

A linear feedback shift register should be described only as a possible implementation, not as a specification.

Also in P67 L2, P74 L17, Annex 166A, and corresponding PICS.

SuggestedRemedy

Refer to a linear feedback shift register as a possible implementation of the scrambler. Use language similar to other cases where additive scramblers are specified.

The text 40.3.1.3.1 is a possible reference.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace "The scrambler uses an LFSR that is initialized" with "The scrambler is initialized"

Cl **166** *SC* **166.1.4** *P* **64** *L* **26** # 146

Pérez-Aranda, Rubén KDPOF

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

I miss reference to subclause where EEE operation of BASE-AU PHY is defined.

SuggestedRemedy

Add "BASE-AU EEE operation is specified in 166.4."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.1.4** *P* **64** *L* **36** # 8

Lusted, Kent Intel Corporation

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

the nominal Baud rates for the 2.5G, 5G, 10G, 25G, and 50G rates are specified in MBd, even though all of the rates are in the multi-gigabit range. It reads odd to me that the text has thousands or tens of thousands MBd when GBd would be a better unit.

SuggestedRemedy

Change the Baud rates for 2.5GBASE-AU, 5GBASE-AU, 10GBASE-AU, 25GBASE-AU, and 50GBASE-AU from MBd units to GBd units.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.1.4** *P* **65** *L* **18** # 147

Pérez-Aranda, Rubén KDPOF

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

Interfaces of PCS with PMA are in form of bits, instead of symbols. Symbol mapping and de-mapping are part of PMA, TX and RX functions, respectively

SuggestedRemedy

Replace “transmit symbols” with “transmit bits”, and replace “receive symbols” with “receive bits”.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.1.4** *P* **65** *L* **25** # 39

Torres, Luisma KDPOF

Comment Type **TR** *Comment Status* **D** *Hierarchy level*

The hierarchy of the functional blocks in PMA do not correspond with the text in 166.3. Typo in "PHY monitor" should be "PHD monitor"

SuggestedRemedy

Substitute "PHY monitor" by "PHD monitor". Add a bigger block named PHY control,that includes PHY TX control, PHD monitor, Link monitor and PHY RX control.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Replace"PHY monitor" with "PHD monitor" in Figure 166-3. Decrease the hierarchy level of PHY quality monitor one step (inside PHY control). Synchronize Figure 166-3 with this hierarchy.

Cl **166** *SC* **166.1.4** *P* **65** *L* **29** # 148

Pérez-Aranda, Rubén KDPOF

Comment Type **ER** *Comment Status* **D** *Hierarchy level*

PHY monitor box is repeated (i.e. PHY quality monitor). It should PHD monitor.

SuggestedRemedy

Replace “PHY monitor” with “PHD monitor”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See #39.

Cl **166** *SC* **166.2.1** *P* **66** *L* **42** # 172

Pérez-Aranda, Rubén KDPOF

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

Should not be reference to 166.2.2.8 instead of 166.2.2.9?

SuggestedRemedy

Replace by the right reference according to comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.1** *P* **67** *L* **7** # 173

Pérez-Aranda, Rubén KDPOF

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

65B/64B code is not defined.

SuggestedRemedy

Replace “65B/64B decoding” with “64B/65B decoding”.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.1** *P* **67** *L* **17** # 174

Pérez-Aranda, Rubén KDPOF

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

Should not be reference to 166.2.2.8 instead of 166.2.2.9?

SuggestedRemedy

Replace by the right reference according to comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.2.1.1** *P* **69** *L* **19** # 175

Pérez-Aranda, Rubén KDPOF

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

There is only one filed PHD.TX.NEXT.*, which is PHD.TX.NEXT.MODE.

SuggestedRemedy

Change “PHD.TX.NEXT.*” with “PHD.TX.NEXT.MODE”.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.2.1.2** *P* **70** *L* **2** # 176

Pérez-Aranda, Rubén KDPOF

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

The use of term parity may result confuse in this context, when cyclic redundancy check is used.

SuggestedRemedy

Change “followed by the resulting 16-bit parity check to compose the concatenation of the PHD and the parity bits” with “followed by the resulting 16-bit redundancy check to compose the concatenation of the PHD and the redundancy bits”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.2.1.2** *P* **70** *L* **5** # 177

Pérez-Aranda, Rubén KDPOF

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

The use of term parity may result confuse in this context, when cyclic redundancy check is used.

SuggestedRemedy

Replace "the PHD and the parity bits” with “the PHD and the redundancy bits”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.2.2** *P* **71** *L* **9** # 224

Lewis, Jon — Dell Technologies

Comment Type **E** *Comment Status* **D** *IEEE-SA Style*

When I read the text in the paragraph and look at Figure 166-7 I slightly confused by how the numbers are shown. 187 200 bits / Transmit block could be interpreted in a couple of ways and the text above shows the same thing. I think this is 187 x 200 bits, but I could be wrong. For the 2 880 65-bit blocks when I read the paragraph it is clear that it is 2,880 blocks.

SuggestedRemedy

In Figure 166-7 change "187 200 bits" to "187 x 200 bits"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The number is "187,200" in US style.

Although the use of a blank space for the thousands (used also in other international standards such as ISO) may be misleading here, this is the format that IEEE SA Standard Style Manual specifies for this case.

Examples can be found in P802.3/D3.2 (see C/91.4, C/108.4, C/116.4 Table 116-6, for example).

Cl **166** *SC* **166.2.2.3** *P* **71** *L* **20** # 272

Thomas, Huber — Intel

Comment Type **T** *Comment Status* **D** *Technical fix required*

While the end result is the same in both, the text of 16.2.2.1.4 and 16.2.2.3 is not aligned with what is shown in Figure 166-10. The figure shows the PHD being split into 20-bit sub-blocks prior to TRC coding and PCS transmit ordering, whereas the text description indicates that the PHD is first TRC-coded and then split into 20-bit sub-blocks by the PCS transmit ordering before being merged with the payload data into RS-FEC messages.

SuggestedRemedy

Choose one or the other orders of operations to describe the process, and align the text or figure accordingly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
In subclause 166.2.2.1.2 insert additional step after step 2 for PHD split.
Edit Figure 166-5 according to the inserted block.
Split 166.2.2.1.4 into two subclauses. First for PHD split, and second for TRC.
TRC encoder will be described operating over 20-bit subblocks and returning 20-bit subblocks.
Remove shall statement in siubclause 166.2.2.3 regarding chunk operation:

"The PCS transmit ordering shall follow each sequence of 80 65-bit blocks, called tx_group80x65B, coming from the payload data path, with a 20-bit encoded PHD sub-block. See Figure 166–10 for details on PCS bit ordering."

Cl **166** *SC* **166.2.2.5** *P* **74** *L* **7** # 178

Pérez-Aranda, Rubén — KDPOF

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

Figure 166–9 may be confuse, because the square boxes representing each bit position of the shift register are depicted continuous from 1 to 22 and number of them is small than 22.

SuggestedRemedy

Remove a square box in the middle of the shift register and replace it with ellipsis, like in Figure 166-33 and Figure 166-34.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.2.5** *P* **74** *L* **27** # 268

Ran, Adee Cisco

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

"Annex 166A provides examples of BASE-U LFSR binary scrambler sequences for G equal to 1 and 2."

No, it provides portions of the specific scrambler sequences, not mere examples; and these sequences are not required to be generated by an LFSR (it is only a possible implementation).

SuggestedRemedy

Change to "Annex 166A provides partial listings of the scrambler sequences for G equal to 1 and 2".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.2.5** *P* **74** *L* **27** # 179

Pérez-Aranda, Rubén KDPOF

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

The sequence to be xor-ed with the RS-FEC encoder output is generated by the LFSR, and the operation of xor composes the data scrambling. The random sequences are BASE-U binary scrambler LFSR sequences, instead BASE-U LFSR binary scrambler sequences.

SuggestedRemedy

In page 74, line 27, change “BASE-U LFSR binary scrambler sequences” with “ BASE-U binary scrambler LFSR sequences”. Do similar change in Annex 166A title, 166A.2, Table 166A-1, 166A.3, and Table 166-2.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
LFSR is an implementation of the scrambler.
Remove LFSR term from the sentence according to #257

Cl **166** *SC* **166.2.2.6** *P* **74** *L* **29** # 180

Pérez-Aranda, Rubén KDPOF

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

The shall statements of 166.2.2.6 and 166.2.2.7 can be included in a single sub-clause “PCS transmit bit order”. Finding a subclause called “PCS physical header data transmit bit order” after specification of the binary scrambler is confuse because physical header data path was specified before payload data path, RS-FEC and scrambler. Additionally, both, physical header data path and payload data path are related by the time-domain multiplexing of the transmit ordering, so it does not make sense to separate in two different sub-clauses.

SuggestedRemedy

Move text “The PCS transmit function shall conform to the PCS Physical Header Data transmit bit order in Figure 166–10.” to beginning of subclause “PCS transmit bit order” (current 166.2.2.7). Remove sub-clause 166.2.2.6.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.2.7** *P* **74** *L* **37, 38** # 181

Pérez-Aranda, Rubén KDPOF

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

The mapping of XGMII, 25GMII and 50GMII is specified by figures 166-12 and 166-13, regardless the actual exposition of these xMII interfaces in a PHY implementation. Specification is provided in these media independent interfaces, so it cannot be conditional. In other words, if these xMII are not exposed (i.e. used) in a PHY implementation, how the information from the reconciliation layers is mapped?

SuggestedRemedy

Remove “if used” in both lines, 37 and 38.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.2.8.1** *P* **74** *L* **46** # 182

Pérez-Aranda, Rubén KDPOF

Comment Type **TR** *Comment Status* **D** *PCS encoding*

The sentences “The control character for ordered set is labeled as O0 or O4 since it is only valid on the first octet of the xMII. The control character for start is labeled as S0 or S4 for the same reason.” are technically incorrect for 50GMII, only valid for XGMII and 25GMII.

SuggestedRemedy

Re-write first paragraph of 166.2.2.8.1. Use 802.3-2018 sub-clause 82.2.3.1 as reference to write technically correct notation convention for 50GMII. Use 802.3-2018 sub-clause 49.2.4.1 as reference to write technically correct notation convention for XGMII/25GMII.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

With editorial license

Cl **166** *SC* **166.2.2.8.1** *P* **75** *L* **26** # 9

Lusted, Kent Intel Corporation

Comment Type **TR** *Comment Status* **D** *Technical fix required*

In Figure 166-10, it is difficult to quickly ascertain if the "20-bit PHD sub-block n" on line 18 is the same as the "20-bit PHD sub-block n" on line 26 and line 35. This is because the blocks before and after the "three-time Repetition Code" have the same name in the Figure. Even with the text "Encoded PHD" on line 25, it wasn't clear to me that the blocks were different until reading sub-Clause 166.1.4, specifically the paragraph on pg 64, line 6. Consider appending an "e" to the "PHD" (to be "ePHD") to improve the differentiation.

SuggestedRemedy

In Figure 166-10, change the blocks named "20-bit PHD sub-block n" at line 26 to be "20-bit ePHD sub-block n". Change the blocks named "20-bit PHD" to "20-bit ePHD".

Make appropriate changes in the other Figures, such as Figure 166-17, and the text where the "20-bit ePHD" is relevant.

Implement with editorial license.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The proposed encoding is a simple three-time Repetition Code, and therefore, the incoming 20-bit PHD sub-blocks are the same before and after this particular code.

However, the readability of Figure 166-10 can be improved by adding three arrows with common origin in a single incoming 20-bit PHD sub-block and terminating in each of the three repeats generated by the TRC.

Cl **166** *SC* **166.2.2.8.2** *P* **76** *L* **50** # 183

Pérez-Aranda, Rubén KDPOF

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

Title is confuse, at this level of hierarchy. We are in the specification of PCS 64B/65B encoding. Transmit process is part. PCS transmit process can be understood as PCS transmit function, with already include 64B/65B encoding and much more functionality inside.

SuggestedRemedy

Change “PCS transmit process” with “Transmit process” Same for the beginning of the first paragraph of this sub-clause.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.2.8.2** *P* **77** *L* **53** # 184

Pérez-Aranda, Rubén KDPOF

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

“tx_block<0> contains the data/ctrl header and the remainder of the bits contain the 65-bit block payload.” is redundant with the next sub-clause.

SuggestedRemedy

Remove sentence of page 77 line 53. Start first paragraph page 78 with “The first bit tx_block<0>
of a 65-bit block …” to specify clearly how bits are mapped to tx_block construct.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.2.8.4** *P* **79** *L* **46** # 226

Martino, Kjersti Inneos

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

Typo in table number for control codes for XGMII, 25GMII, listed as Table 166-5, but should be 166-4

SuggestedRemedy

"Table 166-4 for BASE-U connected to XGMII or 25GMII"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.2.8.4** *P* **79** *L* **46** # 197

Pérez-Aranda, Rubén KDPOF

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

Incorrect reference.

SuggestedRemedy

Change "Table 166–5 for BASE-U PCS connected to XGMII or 25GMII" with “Table 166–4 for BASE-U PCS connected to XGMII or 25GMII”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.2.8.4** *P* **79** *L* **46** # 273

Thomas, Huber Intel

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

The control codes from XGMII and 25GMII are table 166-4

SuggestedRemedy

Change Table 166-5 to Table 166-4.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.2.8.4** *P* **79** *L* **51** # 269

Ran, Adee Cisco

Comment Type **T** *Comment Status* **D** *EEE capability*

"If EEE has not been negotiated"
How is EEE negotiated?

SuggestedRemedy

Please add some cross-reference and/or clarifying text.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Substitute "If EEE has not been negotiated" with "If EEE capability is not enabled"

Add the following clarifiying text explaining how EEE capability is enabled in (p.104 l.2):
"166.4.1 EEE capability enable

EEE capability shall be enabled when the field PHD.CAP.LPI (see Table 166-2) of both, the transmitted and received PHD, are equal to 1."

Add PICS accordingly.

Cl **166** *SC* **166.2.2.8.4** *P* **80** *L* **20** # 270

Ran, Adee Cisco

Comment Type **T** *Comment Status* **D** *Reserved control codes*

Why are there six, and only six, "reserved" control codes in this table? Aren't all control codes other than the ones listed reserved?

SuggestedRemedy

Delete these rows and add a note that all control codes other than the ones listed are reserved.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
These reserved control codes are included in the table consistently with all the 802.3 clauses that use 64B/65B and 64B/66B.

Cl **166** *SC* **166.2.2.8.4** *P* **80** *L* **20** # 198

Pérez-Aranda, Rubén KDPOF

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

Column “BASE-U PCS O code” should be used to include the value of the O codes, which are 4-bit, and used to encode the ordered set control codes using in combination with the block type field. Why reserved0 through reserved5 appears in this column? This column only makes sense for sequence ordered sets and signal ordered sets. See 802.3-2018 49.2.4.4.

SuggestedRemedy

Remove reserved0 through reserved5 from column “BASE-U PCS O code”.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.2.8.4** *P* **80** *L* **31** # 251

Ran, Adee Cisco

Comment Type **T** *Comment Status* **D** *Reserved control codes*

Table 166-4 footnote a says "Reserved for INCITS T11 Fibre Channel use."
Is it expected that Fibre Channel will be used over these PHYs? Was there a request to reserve these specific codes for Fibre Channel?

Similarly in Table 166-5.

SuggestedRemedy

Delete the last row and footnote a.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The signal order set reserved control code is included in the table consistently with all the 802.3 clauses that use 64B/65B and 64B/66B.

Cl **166** *SC* **166.2.2.8.6** *P* **81** *L* **24** # 252

Ran, Adee Cisco

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

Per the style manual (14.2), "In general text, isolated numbers less than 10 should be spelled out".

There are two such numbers in this line, 4 and 8, and others may exist.

SuggestedRemedy

Change "4" to "four" and "8" to "eight".
Apply in other cases of isolated numbers across the draft as necessary.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.2.8.9** *P* **82** *L* **1** # 199

Pérez-Aranda, Rubén KDPOF

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

BASE-U PCS use one kind …

SuggestedRemedy

Replace with "BASE-U PCS uses one kind …"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.2.8.9** *P* **82** *L* **3** # 227

Martino, Kjersti Inneos

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

Only reference Table 166-5 for 50GMII for mapping, but should also list Table 166-4 to cover XGMII & 25GMII

SuggestedRemedy

"See Tables 166-4 and 166-5 for the mappings."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Replace with "See Table 166-4 and Table 166-5 for the mappings."

Cl **166** *SC* **166.2.2.8.9** *P* **82** *L* **3** # 200

Pérez-Aranda, Rubén KDPOF

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

Two tables should in the reference.

SuggestedRemedy

Replace "See Table 166–5 for the mappings.” with “See Table 166–4 and Table 166–5 for the mappings.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See #227.

Cl **166** *SC* **166.2.2.8.9** *P* **82** *L* **13** # 201

Pérez-Aranda, Rubén KDPOF

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

Incorrect reference.

SuggestedRemedy

Replace “166.2.2.8.2” with “166.2.2.9”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.2.9.2** *P* **83** *L* **6** # 203

Pérez-Aranda, Rubén KDPOF

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

Incorrect reference.

SuggestedRemedy

Replace "Variable set by the PHY TX control state diagram to control the 64B/65B encoder operation (see 166.2.2.10).” with “Variable set by the PHY TX control state diagram to control the 64B/65B encoder operation (see 166.3.4.2).”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.2.9.3** *P* **83** *L* **20** # 204

Pérez-Aranda, Rubén KDPOF

Comment Type **TR** *Comment Status* **D** *PCS encoding*

T_BLOCK_TYPE = {C, S, T, D, E} has to return additionally LI, in case of LPI encoded by 72-bit tx_raw

SuggestedRemedy

Replace "T_BLOCK_TYPE = {C, S, T, D, E}" with “T_BLOCK_TYPE = {C, S, T, D, E, LI}”. Replace in line 21, “to one of the five types {C, S, T, D, E} depending on its contents.” with “to one of the six types {C, S, T, D, E, LI} depending on its contents.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.2.9.3** *P* **83** *L* **24** # 205

Pérez-Aranda, Rubén KDPOF

Comment Type **TR** *Comment Status* **D** *PCS encoding*

Paragraph from line 24 to 38 provide definitions not valid for a transmitter function that uses 72-bit tx_raw vector.

SuggestedRemedy

Replace full paragraph with (copies from 802.3-2018 C/49.2.13.2.3: “C; The vector contains one of the following:
a) eight valid control characters other than /O/, /S/, /T/ and /E/; and, if the EEE capability is supported, zero or four of the characters are /LI/;
b) one valid ordered set and four valid control characters other than /O/, /S/ and /T/;
c) two valid ordered sets.
LI; For EEE capability, this vector contains eight /LI/ characters.
S; The vector contains an /S/ in its first or fifth character, any characters before the S character are valid control characters other than /O/, /S/ and /T/ or form a valid ordered set, and all characters following the /S/ are data characters.
T; The vector contains a /T/ in one of its characters, all characters before the /T/ are data characters, and all characters following the /T/ are valid control characters other than /O/, /S/ and /T/.
D; The vector contains eight data characters.
E; The vector does not meet the criteria for any other value.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.2.9.3** *P* **83** *L* **52** # 228

Martino, Kjersti Inneos

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

Only reference Table 166-5 for 50GMII for mapping, but should also list Table 166-4 to cover XGMII & 25GMII

SuggestedRemedy

"A valid character control is one containing a xMII control code specified in Table 166-4 or 166–5."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Replace with "When BASE-U PCS is connected to XGMII or 25GMII, a valid character control is one containing a control code specified in Table 166-4. When BASE-U PCS is connected to 50GMII, a valid character control is one containing a control code specified in Table 166-5."

Cl **166** *SC* **166.2.2.9.3** *P* **83** *L* **52** # 206

Pérez-Aranda, Rubén KDPOF

Comment Type **ER** *Comment Status* **D** *PCS encoding*

Additional reference needed.

SuggestedRemedy

Replace "specified in Table 166–5.” with “specified in Table 166-4 and Table 166–5.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See #228.

Cl **166** *SC* **166.2.2.9.3** *P* **83** *L* **54** # 207

Pérez-Aranda, Rubén KDPOF

Comment Type **ER** *Comment Status* **D** *PCS encoding*

Additional reference needed.

SuggestedRemedy

Replace "three characters following the /O/. For BASE-U PCS” with “three characters following the /O/. A valid /O/ is any character with a value for O code in Table 166-4. For BASE-U PCS”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.2.9.3** *P* **84** *L* **3** # 208

Pérez-Aranda, Rubén KDPOF

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

Classification in case of LPI not supported is defined, however adding a note can be convenient.

SuggestedRemedy

Add after line 3, before T_TYPE(tx_raw<71:0>) definition: “Note — A BASE-U PHY that does not support EEE classifies vectors containing one or more /LI/ control characters as type E.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add note: “NOTE — A BASE-U PHY without EEE capability classifies vectors containing one or more /LI/ control characters as type E.”

Cl **166** *SC* **166.2.3** *P* **84** *L* **15** # 185

Pérez-Aranda, Rubén KDPOF

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

Redundant shall statement.Already in 166.2.3.6.

SuggestedRemedy

Remove ", and the PCS receive bit ordering in Figure 166–17.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.3** *P* **84** *L* **25** # 209

Pérez-Aranda, Rubén KDPOF

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

Error symbols are not defined. How the codewords are marked as erroneous depends on RS-FEC decoder implementation.

SuggestedRemedy

Replace "with error symbols” with “as erroneous”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.3** *P* **84** *L* **25** # 210

Pérez-Aranda, Rubén KDPOF

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

There is a plurality of RS-FEC messages.

SuggestedRemedy

Replace "The RS-FEC message obtained” with “Each RS-FEC message obtained”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.3** *P* **84** *L* **32** # 211

Pérez-Aranda, Rubén KDPOF

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

Figure is not providing specification about RXC.

SuggestedRemedy

Replace "as specified in Figure 166–18.” with “as specified in 166.2.3.7 with mapping of Figure 166-18”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.3** *P* **84** *L* **33** # 214

Pérez-Aranda, Rubén KDPOF

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

They are transfers (either data or control)

SuggestedRemedy

Replace "50GMII data transfers” with “50GMII transfers”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.3** *P* **84** *L* **33** # 212

Pérez-Aranda, Rubén KDPOF

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

They are transfers (either data or control)

SuggestedRemedy

Replace "XGMII or 25GMII data transfers” with “XGMII or 25GMII transfers”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.3** *P* **84** *L* **36** # 213

Pérez-Aranda, Rubén KDPOF

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

Figure is not providing specification about RXC.

SuggestedRemedy

Replace "as specified in Figure 166–19." with “as specified in 166.2.3.7 with mapping of Figure 166-19”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.3.1** *P* **84** *L* **49** # 253

Ran, Adee Cisco

Comment Type **T** *Comment Status* **D** *Text improvement*

"The descrambler shall process the 195 840 Transmit Block bits"

Shouldn't it process the received bits? (yes, they are in a block called "Transmit block", but as written it is confusing).

Maybe a "Receive block" should also be defined to help readers distinguish the two (they both exist simultaneously in a PHY).

SuggestedRemedy

Rephrase as necessary.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
"The descrambler shall process the 195 840 bits of a received Transmit Block"

Cl **166** *SC* **166.2.3.1** *P* **84** *L* **50** # 254

Ran, Adee Cisco

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

"using the same LFSR with same initialization value specified in 166.2.2.5"
It can't be physically the same LFSR, since the initialization occurs at different times.
What is common with the scrambler in 166.2.2.5 are only the polynomial and the periodic initialization value.

It is also unclear when the initialization occurs. I assume the location is obtained from some initial descrambler lock acquisition, but it would better be stated explicitly.

SuggestedRemedy

Change to "using the same polynomial and the same initialization value as specified in 166.2.2.5".

Clarify how the descrambler lock is acquired.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to "using the same polynomial and the same initialization value as specified in 166.2.2.5".

Scrambler lock does not need to be adquired because it is additive and random binary sequence is initialized at the begining of each Transmit Block.
Once the receiver archieves Transmit Block synchronization, it knows the symbol where the scrambler is initialized for each Transmit Block (first symbol). The Transmit Block synchronization can be implemented by cross-correlation because apriory known information is sent by transmitter (LBLOCK_T) before link is stablished (see https://www.ieee802.org/3/cz/public/mar_2021/perezaranda_3cz_02_0321_scrambler.pdf)

Cl **166** *SC* **166.2.3.1** *P* **100** *L* **51** # 255

Ran, Adee Cisco

Comment Type **T** *Comment Status* **D** *Text improvement*

"The assessment of the above defined PHY quality criterion may be based on estimation of the noise variance at the symbol detector decision points <…>, which expressed in base-2 logarithmic units has to be lower than a given threshold T_LM"

But T_LM is not given anywhere.

T_LM seems to be a mean squared error threshold, which depends on implementation, since the quality criterion also depends on the constellation distance (to calculate the SNR).

In addition, the quality criterion may also be dependent on the probability distribution of the error, the possibility of non-stationary bit error statistics at the FEC input, any maybe other factors.

Assuming T_LM or corresponding criteria (such as minimum SNR) are not specified, and instead left as an implementation detail, then there may be no need to define T_LM and LM (equation 166-6) in such detail; subclause 166.3.5.2 can mostly be replaced by stating that LM is an implementation-specific value representing the SNR margin, expressed in a base-2 logarithmic scale relative to minimum SNR required for meeting the criterion in 166.3.5.2.

SuggestedRemedy

Change "lower than a given threshold T_LM" to "lower than an implementation-specific threshold T_LM".

Consider rewriting this subclause in the spirit of the last sentence in the comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "lower than a given threshold T_LM" to "lower than an implementation dependent threshold T_LM".

Cl **166** *SC* **166.2.3.2** *P* **86** *L* **6** # 215

Pérez-Aranda, Rubén KDPOF

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

I miss a reference

SuggestedRemedy

Replace "by setting the R_BLOCK_TYPE of the affected 65-bit blocks equal to E" with "by setting the R_BLOCK_TYPE of the affected 65-bit blocks equal to E (see 166.2.3.7.3)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.3.3** *P* **86** *L* **11** # 216

Pérez-Aranda, Rubén KDPOF

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

Repeated sentence.

SuggestedRemedy

Remove first one "The PCS receiver ordering shall separate from each RS-FEC message the group of 80 65-bit blocks and 20-bit encoded PHD sub-block." Fix PICS accordingly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.3.3** *P* **86** *L* **11** # 274

Thomas, Huber Intel

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

The two sentences in this pagraph are the same, except that the first one doesn't refer to the figure

SuggestedRemedy

Delete the first sentence.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.3.4** *P* **86** *L* **15** # 275

Thomas, Huber Intel

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

It seems like a figure analogous to Figure 166-10 for the transmit direction would be helpful to illustrate the receiver processing of the PHD

SuggestedRemedy

Add a figure that is the reverse of Figure 166-10 and a reference to it.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.3.5** *P* **86** *L* **25** # 217

Pérez-Aranda, Rubén KDPOF

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

Incorrect reference. Block types are defined in different sub-clause.

SuggestedRemedy

Replace "The block type field contains a reserved value (see 166.2.2.8.4).” with “The block type field contains a reserved value (see 166.2.2.8.3).”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.3.5** *P* **86** *L* **26** # 218

Pérez-Aranda, Rubén KDPOF

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

Space before Table 166-14.

SuggestedRemedy

Add space.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.3.5** *P* **86** *L* **31** # 276

Thomas, Huber Intel

Comment Type **T** *Comment Status* **D** *RS-FEC*

The penultimate paragraph seems out of place here (it is discussing RS-FEC decoding, and the text of 166.2.3.2 already covers the concept of error marking the contents of FEC codewords with uncorrectable errors), and the final pargraph is already covered in the first line of the clause.

SuggestedRemedy

Delete the last two paragraphs of 166.2.3.5.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.3.5** *P* **86** *L* **31** # 219

Pérez-Aranda, Rubén KDPOF

Comment Type **TR** *Comment Status* **D** *RS-FEC*

Redundant shall statement. Already in 166.2.3.2.

SuggestedRemedy

Remove “The PCS receive function shall check that the RS-FEC function specified in 166.2.2.3 decoded correctly the 31 received codewords. If the check fails, the RS-FEC codeword is invalid.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See #276.

Cl **166** *SC* **166.2.3.5** *P* **86** *L* **34** # 220

Pérez-Aranda, Rubén KDPOF

Comment Type **TR** *Comment Status* **D** *RS-FEC*

/E/ is not valid value for R_BLOCK_TYPE, but E.

SuggestedRemedy

Replace "The R_BLOCK_TYPE of an invalid 65-bit block is set to /E/.” with “The R_BLOCK_TYPE of an invalid 65-bit block is set to E.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
This sentence is removed according #276

Cl **166** *SC* **166.2.3.6** *P* **86** *L* **39, 41** # 186

Pérez-Aranda, Rubén KDPOF

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

The mapping from 65-bit blocks is specified by figures 166-18 and 166-19, regardless the actual exposition of these xMII interfaces in a PHY implementation. Specification is provided in these media independent interfaces, so it cannot be conditional. In other words, if these xMII are not exposed (i.e. used) in a PHY implementation, how the information to the reconciliation layers is mapped?

SuggestedRemedy

Remove “if used” in both lines, 39 and 41. Full stop with new paragraph after first sentence. Just period after second sentence.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.3.7.2** *P* **89** *L* **14** # 187

Pérez-Aranda, Rubén KDPOF

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

Plural …

SuggestedRemedy

Replace "The leftmost bit in the figure is" with "The leftmost bit in the figures is"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.3.7.3** *P* **89** *L* **35** # 188

Pérez-Aranda, Rubén KDPOF

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

Redundant …

SuggestedRemedy

Replace "and decodes the 65B RS-FEC bit vector" with "and decodes it"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.3.7.3** *P* **89** *L* **36** # 189

Pérez-Aranda, Rubén KDPOF

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

Incorrect reference in the shall statement.

SuggestedRemedy

Replace "The DECODE function shall decode the rx_block based on specified in 166.2.2.8.4." with "The DECODE function shall decode the rx_block based on specified in 166.2.2.8."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.3.7.3** *P* **90** *L* **32** # 229

Martino, Kjersti Inneos

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

Only reference Table 166-5 for 50GMII, but should also list Table 166-4 to cover XGMII & 25GMII

SuggestedRemedy

"A valid control character is one containing a BASE-U control code in Table 166-4 or 166–5. A valid O code is one containing a O code specified in Table 166-4 or 166–5.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Insert in page 90 line 15: "A valid control character is one containing a BASE-U control code in Table 166–4. A valid O code
is one containing a O code specified in Table 166–4."

Cl **166** *SC* **166.2.3.7.3** *P* **90** *L* **34** # 191

Pérez-Aranda, Rubén KDPOF

Comment Type **TR** *Comment Status* **D** *EEE capability*

Classification in case of LPI not supported is defined, however adding a note can be convenient.

SuggestedRemedy

Add after line 33, before R_TYPE(rx_block<64:0>) definition: "Note — A BASE-U PHY that does not support EEE classifies vectors containing one or more /LI/ control characters as type E."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add note:
"NOTE — A BASE-U PHY without EEE capability classifies vectors containing one or more /LI/ control characters as type E."
Also replace 79 line 51 "that supports EEE" with "with EEE capability" for consistency with comment #269.
Also replace 80 line 51 "that supports EEE" with "with EEE capability" for consistency with comment #269.

Cl **166** *SC* **166.2.3.7.3** *P* **90** *L* **32,33** # 190

Pérez-Aranda, Rubén KDPOF

Comment Type **ER** *Comment Status* **D** *PCS encoding*

Lack of reference to Table 166-4.

SuggestedRemedy

Replace "A valid control character is one containing a BASE-U control code in Table 166–5. A valid O code is one containing a O code specified in Table 166–5." with "A valid control character is one containing a BASE-U control code in Table 166–4 and Table 166–5. A valid O code is one containing a O code specified in Table 166–4 and Table 166–5."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See #229.

Cl **166** *SC* **166.2.3.8** *P* **91** *L* **10** # 192

Pérez-Aranda, Rubén KDPOF

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

Transition R_TYPE(rx_block) = (E + D + LI + T) is disconnected from state RX_INIT

SuggestedRemedy

Connect it

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.3.8** *P* **91** *L* **11** # 193

Pérez-Aranda, Rubén KDPOF

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

Transition R_TYPE(rx_block) = C has a vertical line in the middle of the text (at the letter l position).

SuggestedRemedy

Remove it

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.2.3.8** *P* **91** *L* **39** # 277

Opsasnick, Eugene Broadcom

Comment Type **E** *Comment Status* **D** *Technical fix required*

In Fig. 166-20, RX_T state does not show next state transitions when R_TYPE(rx_block) = (T + D + E)

SuggestedRemedy

Add state transition from RX_T to RX_E when R_TYPE(rx_block) = (T + D + E)

Proposed Response *Response Status* **W**

PROPOSED REJECT.
All the transitions to RX_T state check that the R_TYPE_NEXT is not T, is not D, and is not E.
(R_TYPE_NEXT = (S + C + LI))

Cl **166** *SC* **166.2.3.8** *P* **91** *L* **41** # 194

Pérez-Aranda, Rubén KDPOF

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

Text of transition "R_TYPE(rx_block) = C" from state RX_T is separated from the transition line.

SuggestedRemedy

Move transition text closer to line.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.3** *P* **92** *L* **48** # 41

Torres, Luisma KDPOF

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

"link quality" is not the name of the state machine described in 166.3.5

SuggestedRemedy

Replace "link quality" by "PHY quality monitor"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.3** *P* **92** *L* **48** # 40

Torres, Luisma KDPOF

Comment Type **ER** *Comment Status* **D** *Hierarchy level*

166.3.4 also includes PHD monitor

SuggestedRemedy

Replace "PHY control and link monitoring" by "PHY control, link monitoring, and PHD monitoring"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.3.4.3** *P* **98** *L* **18** # 195

Pérez-Aranda, Rubén KDPOF

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

State diagram is specified instead of state machine.

SuggestedRemedy

Change “machine” with “diagram”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.3.5.2** *P* **100** *L* **53** # 256

Ran, Adee Cisco

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

"If the condition <condition in equation> holds, the variable loc_rcvr_status is assigned the value OK"
Language can be simplified; and what happens if it does not?

SuggestedRemedy

Change to "the variable loc_rcvr_status is assigned the value OK if <condition in equation>. Otherwise, it is assigned the value NOT_OK".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.4.1** *P* **104** *L* **6** # 20

Hayashi,Takehiro HAT Labs

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

"in the sense" may be incorrect.

SuggestedRemedy

chage to "in the sense that".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.4.2** *P* **104** *L* **23** # 196

Pérez-Aranda, Rubén KDPOF

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

Cross-reference to PCS physical header transmit bit order is provided. It is more appropriate a cross-reference to sub-clause where physical header data path is specified.

SuggestedRemedy

Change "(see 166.2.2.6).” with “(see 166.2.2.1).”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.4.2.4** *P* **105** *L* **41** # 230

Martino, Kjersti Inneos

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

Figure 166-31 is shown after figure 166-32. Note the figures are actually on page 106.

SuggestedRemedy

Move figure 166-31 directly below figure 166-30

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.4.3** *P* **106** *L* **37** # 221

Pérez-Aranda, Rubén KDPOF

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

Figures 166-32 and 166-31 are in reverse order.

SuggestedRemedy

Check anchors of the figures to get in the text Figure 166-31 before Figure 166-32.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.5.1** *P* **108** *L* **4** # 22

Hayashi,Takehiro HAT Labs

Comment Type **E** *Comment Status* **D** *Normative wording*

"BER test is run between…" should be a requirement.

SuggestedRemedy

use "shall".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This sentence is an introductory description of a setup, not an specification of the PHY.
Shall statements regarding this BER test mode can be found in the following paragraphs.

Cl **166** *SC* **166.5.1** *P* **108** *L* **5** # 23

Hayashi,Takehiro HAT Labs

Comment Type **E** *Comment Status* **D** *Normative wording*

if "can" is the permission, "may"should be used.

SuggestedRemedy

change to "may".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
In this sentence, a capability of the BER test mode is described.

IEEE SA Standards Style Manual 2021 Clause 9, page 9:

"The word may is used to indicate a course of action permissible within the limits of the standard (may equals is permitted to).
The word can is used for statements of possibility and capability, whether material, physical, or causal (can equals is able to)."

Cl **166** *SC* **166.5.1** *P* **108** *L* **9** # 231

Martino, Kjersti Inneos

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

Change wording for clarity of the following: "regardless the link status,"

SuggestedRemedy

"regardless of the link status,"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.5.1** *P* **108** *L* **15** # 132

Pérez-Aranda, Rubén KDPOF

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

Redundant ….

SuggestedRemedy

Replace "When the link partner receiver is in BER test mode operation mode," with “When the link partner receiver is in BER test mode,”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.5.1** *P* **108** *L* **21** # 133

Pérez-Aranda, Rubén KDPOF

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

Redundant ….

SuggestedRemedy

Replace "The transmitter shall announce to the link partner receiver the BER test mode operation mode” with “The transmitter shall announce to the link partner receiver the BER test mode”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.5.4** *P* **109** *L* **5** # 134

Pérez-Aranda, Rubén KDPOF

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

Confuse sentence.

SuggestedRemedy

Replace "Bit sequence C is a 5462-bit sequence which generates an output bit sequence encoding” with "Bit sequence C is a 5462-bit sequence generated encoding”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** SC **166.5.4** P **109** L **32** # 135

Pérez-Aranda, Rubén KDPOF

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

Incorrect shift register.

SuggestedRemedy

Replace “r[21]” with “r[24]”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** SC **166.5.5** P **110** L **12** # 136

Pérez-Aranda, Rubén KDPOF

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

Generation of bit sequence A is not correct.

SuggestedRemedy

Replace "Bit sequence A is formed by concatenating bit sequences A1, A2, and A3.” with “Bit sequence A is formed by binary inverting the concatenation of bit sequences A1, A2, and A3.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** SC **166.6.1** P **111** L # 24

Hayashi,Takehiro HAT Labs

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

no contents

SuggestedRemedy

add contents, otherwise delete the sub-clause

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** SC **166.6.2.1.2** P **111** L **45** # 84

Pérez-Aranda, Rubén KDPOF

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

Here the transmit clock period term is used, instead of transmit symbol period of 166.3.1

SuggestedRemedy

Unify using transmit symbol period.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** SC **166.6.3.2** P **113** L **41** # 85

Pérez-Aranda, Rubén KDPOF

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

Change transmitter optical specifications to transmitter optical characteristics.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** SC **166.6.3.3** P **113** L **52** # 86

Pérez-Aranda, Rubén KDPOF

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

Change receive optical specifications to receiver optical characteristics.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** SC **166.6.3.4** P **114** L **7** # 87

Pérez-Aranda, Rubén KDPOF

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

“The PMD receive function” should be “The PMD signal detect function”

SuggestedRemedy

Change per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.6.4.1** *P* **114** *L* **26** # 88

Pérez-Aranda, Rubén KDPOF

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

The operating range for the 2.5GBASE-AU, 5GBASE-AU, 10GBASE-AU, 25GBASE-AU, and 50GBASE-AU PMDs

SuggestedRemedy

Simpler: the operating range for the BASE-AU PMDs

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.6.4.2** *P* **115** *L* **6** # 90

Pérez-Aranda, Rubén KDPOF

Comment Type **TR** *Comment Status* **D** *TXRX Characteristics*

In perezaranda_3cz_02_2205_TXRX_Characteristics.pdf, changes of TX characteristics are proposed with several objectives: Be consistent with new TDFOM proposed in perezaranda_3cz_01_2205_TDFOM_Simpler.pdf, Extend upper limit of TDFOM to allow larger implementation penalties, and reduce max AOP and max OMA to be more consistent with more realistic TX implementation (i.e. reduced current in low temperature) and relax RX implementation (i.e. min trans-impedance)

SuggestedRemedy

Change values of Table 166–9, according to perezaranda_3cz_02_2205_TXRX_Characteristics.pdf

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.6.4.2** *P* **115** *L* **31** # 278

Simms, William NVIDIA

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

Table entry has type "distorsion'

SuggestedRemedy

correct to distortion

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.6.4.2** *P* **115** *L* **48** # 279

Simms, William NVIDIA

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

footnote b of table 166-9 has typo "launch power blow this value"

SuggestedRemedy

correct 'blow' to below

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.6.4.2** *P* **115** *L* **48** # 25

Hayashi,Takehiro HAT Labs

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

typo "blow"

SuggestedRemedy

"below"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.6.4.2** *P* **115** *L* **48** # 26

Hayashi,Takehiro HAT Labs

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

Although main body describes "transmitter shall meet the specifications in Table-9", note b says "a value above this does not ensure the compliance". This is very confusing.

SuggestedRemedy

clarify the compliance for what, or delete this sentence.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
This foot note has been mistakenly written in the transmitter characteristics table. Remove footnote.

Cl **166** *SC* **166.6.4.2** *P* **115** *L* **49** # 27

Hayashi,Takehiro HAT Labs

Comment Type **T** *Comment Status* **D** *External standards*

The EF template specified in 61300-1-4 is only for 850 nm. Need to confirm if this template can be applicable to 980nm.

SuggestedRemedy

add "tetative" in the enfircled flux column, until the comfirmation by IEC is done.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Link budget analysis and TX characteristics are based on the assumption that this EF specification is met.
For example, OM3 fiber EMB extrapolation at 980 nm in previous contributions assume the same EF specification (see https://www.ieee802.org/3/cz/public/27_oct_2020/pimpinella_3cz_01_271020.pdf and https://www.ieee802.org/3/cz/public/may_2021/abbott_3cz_01_0521_Extrapolation_of_IEC_guidance_for_OM3_to_980.pdf)

Launching conditions of 980 nm VCSELs is similar to 850 nm because active area construction is very similar. In any case, EF specification is going to be met in a real implementation also considering the design of optics between VCSEL and optical fiber.

Cl **166** *SC* **166.6.4.2** *P* **115** *L* **49** # 232

Martino, Kjersti Inneos

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

In Table 166-9 note b, there is a typo in "launch power blow this value cannot"

SuggestedRemedy

"launch power below this value cannot"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.6.4.2** *P* **115** *L* **49** # 89

Pérez-Aranda, Rubén KDPOF

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

Change "launch power blow this value cannot be compliant; however, a value above this does not ensure compliance.." to “launch power below this value cannot be compliant; however, a value above this does not ensure compliance.”

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.6.4.3** *P* **116** *L* **3** # 91

Pérez-Aranda, Rubén KDPOF

Comment Type **TR** *Comment Status* **D** *TXRX Characteristics*

In perezaranda_3cz_02_2205_TXRX_Characteristics.pdf, changes of TX characteristics are proposed with several objectives: Be consistent with new TDFOM proposed in perezaranda_3cz_01_2205_TDFOM_Simpler.pdf, Extend upper limit of TDFOM to allow larger implementation penalties, and reduce max AOP and max OMA to be more consistent with more realistic TX implementation (i.e. reduced current in low temperature) and relax RX implementation (i.e. min trans-impedance)

SuggestedRemedy

Change values of Table 166–10, according to perezaranda_3cz_02_2205_TXRX_Characteristics.pdf

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.6.4.3** *P* **116** *L* **22** # 28

Hayashi,Takehiro HAT Labs

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

typo "thershold"

SuggestedRemedy

"threshold"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.6.4.3** *P* **116** *L* **22** # 280

Simms, William NVIDIA

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

table 166-10 entry has typo" Damage thershold (max)"

SuggestedRemedy

correct "thershold" to "threshold"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.6.4.3** *P* **116** *L* **48** # 29

Hayashi,Takehiro HAT Labs

Comment Type **E** *Comment Status* **X** *TXRX Characteristics*

Although main body describes "receiver shall meet the specifications in Table-10", note b says "a value above this does not ensure the compliance". This is very confusing.

SuggestedRemedy

clarify the compliance for what, or delete this sentence.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The shall statement is referring to the complete table, including the foot notes. The caveat indicated in foot note b is just for the average power when considered individually.

Cl **166** *SC* **166.6.4.4** *P* **117** *L* **14** # 30

Hayashi,Takehiro HAT Labs

Comment Type **T** *Comment Status* **D** *External standards*

Bandwidth at 980nm hasn't been specified in IEC.

SuggestedRemedy

add "tentative" until the bandwidth at 980 nm is specified in IEC.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Link budget analysis and TX characteristics are based on the assumption that this EF specification is met.
For example, OM3 fiber EMB extrapolation at 980 nm in previous contributions assume the same EF specification (see https://www.ieee802.org/3/cz/public/27_oct_2020/pimpinella_3cz_01_271020.pdf and https://www.ieee802.org/3/cz/public/may_2021/abbott_3cz_01_0521_Extrapolation_of_IEC_guidance_for_OM3_to_980.pdf)

Launching conditions of 980 nm VCSELs is similar to 850 nm because active area construction is very similar. In any case, EF specification is going to be met in a real implementation also considering the design of optics between VCSEL and optical fiber.

Cl **166** *SC* **166.6.4.4** *P* **117** *L* **20** # 31

Hayashi,Takehiro HAT Labs

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

Can't understand the meaning of this row. (minimum channel length?)

SuggestedRemedy

please clarify.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Wrong units. Substitute "m" with "dB".

Cl **166** *SC* **166.6.4.4** *P* **117** *L* **20** # 42

Torres, Luisma KDPOF

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

Table 166-11; wrong units for the Channel insertion loss (min)

SuggestedRemedy

Replace "m" by "dB"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.6.4.4** *P* **118** *L* **3** # 92

Pérez-Aranda, Rubén KDPOF

Comment Type **TR** *Comment Status* **D** *TXRX Characteristics*

Modify Figure 166–36 according to values of perezaranda_3cz_02_2205_TXRX_Characteristics.pdf.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add to the Figure caption "for 50GBASE-AU"

Cl **166** *SC* **166.7.1.1** *P* **118** *L* **34** # 93

Pérez-Aranda, Rubén KDPOF

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

Replace FSWP with FSQWP, for consistency.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.1.1** *P* **119** *L* **14, 39** # 94

Pérez-Aranda, Rubén KDPOF

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

Wrong reference.

SuggestedRemedy

Replace 166.7.8.2.2 with 166.7.5.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.3** *P* **118** *L* **48** # 95

Pérez-Aranda, Rubén KDPOF

Comment Type **TR** *Comment Status* **D** *External standards*

IEC 61280-1-1 title is "Fibre optic communication subsystem basic test procedures - Part 1-1: Test procedures for general communication subsystems - Transmitter output optical power measurement for single-mode optical fibre cable" and 802.3cz is targeted to multi-mode optical fiber cable, specifically OM3 50/125 um. Same reference is used in other multi-mode clauses along 802.3.

SuggestedRemedy

Double check the IEC standard 61280-1-1 is valid for optical power measurement in multi-mode fibers, or replace reference with the one appropriate. Other clauses as C/138 should be revised accordingly in case of replacement. Other clauses as C/52 include reference to TIA/EIA-455-95.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Reference is made to IEC 61280-1-1 in other IEEE 802.3 clauses specifiying a test setup (see 53.9.2) that uses a multimode fiber.

Replace (p.118 l.46) "per IEC 61280-1-1." with "per IEC 61280-1-1 with a multimode fiber patch cord of 1 to 3 meters length consistent with the PHY type under test (see 166.9.1)."

Replace (p.113 l.7) ", between 1 m and 3 m in length" with "of 1 to 3 meters length consistent with the PHY type under test (see 166.9.1)."

Replace (p.120 l.9) "Patch cord is 1 to 3 meters long" with "The patch cord is a multimode fiber of 1 to 3 meters length consistent with the PHY type under test (see 166.9.1)."

Replace (p.122 l.32) "Patch cord is 1 to 3 meters long" with "The patch cord is a multimode fiber of 1 to 3 meters length consistent with the PHY type under test (see 166.9.1)."

Add (p.129 l.52) "The E/O converter is connected to the optical attenuator by means of a 40 meters long multimode patch cord, consistent with the PHY type under test (see 166.9.1)."

Cl **166** *SC* **166.7.3** *P* **118** *L* **51** # 32

Hayashi,Takehiro HAT Labs

Comment Type **E** *Comment Status* **D** *Normative wording*

"may should be used for permission.

SuggestedRemedy

"can" -> "may"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.4.1** *P* **120** *L* **30** # 96

Pérez-Aranda, Rubén KDPOF

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

The combination of the O/E converter and the oscilloscope has a 3 dB bandwidth

SuggestedRemedy

Sign (-) in front of 3 is needed. Change to be “The combination of the O/E converter and the oscilloscope has a -3 dB bandwidth”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.4.1** *P* **120** *L* **31** # 97

Pérez-Aranda, Rubén KDPOF

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

“fourth-order Bessel-Thomson”

SuggestedRemedy

Change to be “fourth-order Bessel-Thomson low-pass filter”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.4.1** *P* **120** *L* **33** # 98

Pérez-Aranda, Rubén KDPOF

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

BW_N is not defined.

SuggestedRemedy

Add “BW_N is the equivalent noise bandwidth of fourth-order Bessel-Thomson filter response”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.4.2** *P* **121** *L* **1** # 99

Pérez-Aranda, Rubén KDPOF

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

OMAouter measurement setup —> The setup was already specified in previous subclause. This is spec of measurement.

SuggestedRemedy

Change to be "OMAouter measurement”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.4.2** *P* **121** *L* **9** # 100

Pérez-Aranda, Rubén KDPOF

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

Wrong eq reference

SuggestedRemedy

Change: “Equation (166–8) specifies the OMAouter of the PMD under test.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.4.2** *P* **121** *L* **9** # 33

Hayashi,Takehiro HAT Labs

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

Typo the number of equation (166-12)

SuggestedRemedy

166-8

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.4.2** *P* **121** *L* **12** # 101

Pérez-Aranda, Rubén KDPOF

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

Not valid unitts

SuggestedRemedy

Replace “(Watts)” with (W)”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.5** *P* **121** *L* **23** # 34

Hayashi,Takehiro HAT Labs

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

Typo the number of equation (166-19)

SuggestedRemedy

166-9

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.5** *P* **121** *L* **22** # 149

Pérez-Aranda, Rubén KDPOF

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

Wrong reference.

SuggestedRemedy

Change to be "Using Pmin and Pmax obtained in 166.7.4.2”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.5** *P* **121** *L* **29** # 150

Pérez-Aranda, Rubén KDPOF

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

Wrong references.

SuggestedRemedy

Change with: “Alternatively, the ER can be measured as defined in 166.7.8..4, Equation (166–21).”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.6** *P* **121** *L* **34** # 151

Pérez-Aranda, Rubén KDPOF

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

“test pattern specified for extinction ratio”. We are measuring RIN.

SuggestedRemedy

Change to be “test pattern specified”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.6** *P* **121** *L* **37, 40** # 152

Pérez-Aranda, Rubén KDPOF

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

center 3% interval

SuggestedRemedy

Change to be “center 3%”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.7** *P* **121** *L* **53** # 153

Pérez-Aranda, Rubén KDPOF

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

“test pattern specified for extinction ratio”. We are measuring jitter.

SuggestedRemedy

Change to be “test pattern specified”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.7** *P* **122** *L* **8** # 155

Pérez-Aranda, Rubén KDPOF

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

Wrong reference.

SuggestedRemedy

Change to be "Pmax and Pmin are measured as specified in 166.7.4.2.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.7** *P* **122** *L* **2, 6** # 154

Pérez-Aranda, Rubén KDPOF

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

Incorrect equation “(Pmax-Pmin)/2”

SuggestedRemedy

Change to be “(Pmax+Pmin)/2"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.8** *P* **122** *L* **18** # 156

Pérez-Aranda, Rubén KDPOF

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

"using the method specified 166.7.8.2"

SuggestedRemedy

Change to "using the method specified in 166.7.8.2"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.8** *P* **122** *L* **21** # 157

Pérez-Aranda, Rubén KDPOF

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

Wrong reference.

SuggestedRemedy

Change to "(specified in 166.7.8.2)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.8.1** *P* **123** *L* **1** # 158

Pérez-Aranda, Rubén KDPOF

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

The combination of the O/E converter and the oscilloscope has a 3 dB bandwidth ….

SuggestedRemedy

Sign (-) in front of 3 is needed and low-pass indication. Change to be "The combination of the O/E converter and the oscilloscope has a -3 dB bandwidth of 16.4 GHz with a fourth-order Bessel-Thomson low-pass response … "

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.8.1** *P* **123** *L* **6** # 159

Pérez-Aranda, Rubén KDPOF

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

"The test pattern (specified in Table 166–13) is transmitted repetitively …" Lack of reference for G=2.

SuggestedRemedy

"The test pattern (specified in Table 166–13 and Table 166-14) is transmitted repetitively …"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.8.2** *P* **123** *L* **12** # 160

Pérez-Aranda, Rubén KDPOF

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

Change method to be consistent with perezaranda_3cz_01_2205_TDFOM_Simpler.pdf

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

With editorial licence.

Cl **166** *SC* **166.7.8.2** *P* **123** *L* **14** # 161

Pérez-Aranda, Rubén KDPOF

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

Remove ", denoted as Ov," to be consistent with perezaranda_3cz_01_2205_TDFOM_Simpler.pdf

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.8.2** *P* **123** *L* **40** # 162

Pérez-Aranda, Rubén KDPOF

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

Change Figure 166-39 to be consistent with perezaranda_3cz_01_2205_TDFOM_Simpler.pdf

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

With editorial licence.

Cl **166** *SC* **166.7.8.2** *P* **123** *L* **46** # 163

Pérez-Aranda, Rubén KDPOF

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

Remove "Then, the noise sequence n is generated by filtering the nin sequence by a noise filter with response H1(f) given by Equation (166–12) with f1 equal to (S × 2.65625 + 0.5) GHz." to be consistent with perezaranda_3cz_01_2205_TDFOM_Simpler.pdf

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.8.2** *P* **123** *L* **49** # 164

Pérez-Aranda, Rubén KDPOF

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

Change sentence according to new Figure 166-39 and perezaranda_3cz_01_2205_TDFOM_Simpler.pdf

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

With editorial licence.

Cl **166** *SC* **166.7.8.2** *P* **123** *L* **49** # 281

Simms, William NVIDIA

Comment Type **E** *Comment Status* **D** *Text improvement*

Is this correct wording" The noise sequence n is added to y generating the noisy sequence yn"

SuggestedRemedy

change " noisy sequence yn" to " noise sequence yn"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The sequence yn is a signal sequence with gaussian noise added.

Cl **166** *SC* **166.7.8.2** *P* **124** *L* **13, 17** # 165

Pérez-Aranda, Rubén KDPOF

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

Remove lines 13 through 17 to be consistent with perezaranda_3cz_01_2205_TDFOM_Simpler.pdf

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.8.2.2** *P* **126** *L* **41** # 166

Pérez-Aranda, Rubén KDPOF

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

"and sigma_n is the standard deviation of the sequence n = sn - s." is not longer valid according to perezaranda_3cz_01_2205_TDFOM_Simpler.pdf

SuggestedRemedy

Replace sentence with “and sigma_n is calculated with Equation (166-XX).” Add Equation (166-XX) as the equation of slide 6 of perezaranda_3cz_01_2205_TDFOM_Simpler.pdf, which calculates sigma_n as a function of sigma_n_in and coefficients of G(z).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** SC **166.7.8.2.3** P **126** L **54** # 167

Pérez-Aranda, Rubén KDPOF

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

Fifth through eighth steps are not consistent with perezaranda_3cz_01_2205_TDFOM_Simpler.pdf.

SuggestedRemedy

Replace 5th through 8th steps with the following two steps:"– Select CID sequences with length greater or equal to 14. – Remove first 6 and last 6 samples from the selected CID sequences. "

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** SC **166.7.8.2.4** P **127** L **15** # 168

Pérez-Aranda, Rubén KDPOF

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

Equation (166-18) is no consistent with perezaranda_3cz_01_2205_TDFOM_Simpler.pdf

SuggestedRemedy

Remove term sqrt(Ov) to make the Equation consistent

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** SC **166.7.8.2.4** P **127** L **32** # 169

Pérez-Aranda, Rubén KDPOF

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

TDFOM0 values are not longer valid for new TDFOM method of perezaranda_3cz_01_2205_TDFOM_Simpler.pdf

SuggestedRemedy

Replace values with ones of perezaranda_3cz_01_2205_TDFOM_Simpler.pdf

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** SC **166.7.8.3** P **127** L **45** # 35

Hayashi,Takehiro HAT Labs

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

Typo the number of equation (166-21)

SuggestedRemedy

166-20

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** SC **166.7.8.3** P **127** L **45** # 170

Pérez-Aranda, Rubén KDPOF

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

Not valid reference

SuggestedRemedy

Replace with “The OMAouter can be calculated as defined in Equation (166–20)”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** SC **166.7.8.3** P **127** L **46** # 102

Pérez-Aranda, Rubén KDPOF

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

Specifications vs descriptions

SuggestedRemedy

Replace "as described in 166.7.8.2.” with “as specified in 166.7.8.2.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** SC **166.7.8.3** P **127** L **49** # 171

Pérez-Aranda, Rubén KDPOF

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

Not valid unitts

SuggestedRemedy

Replace “(dB)” with “(W)”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.8.4** *P* **128** *L* **4** # 103

Pérez-Aranda, Rubén KDPOF

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

Specifications vs descriptions

SuggestedRemedy

Replace "as described in 166.7.8.2." with “as specified in 166.7.8.2.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.8.5** *P* **128** *L* **12** # 104

Pérez-Aranda, Rubén KDPOF

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

Specifications vs descriptions

SuggestedRemedy

Replace "as described in 166.7.8.2." with “as specified in 166.7.8.2.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.9** *P* **128** *L* **16** # 106

Pérez-Aranda, Rubén KDPOF

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

From line 16 through 34, modify the range of values of STDFOM for which the RX sensitivity has to be met, according to new Table 166-9 of TX characteristics of perezaranda_3cz_02_2205_TXRX_Characteristics.pdf

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

With editorial license

Cl **166** *SC* **166.7.9** *P* **128** *L* **16** # 107

Pérez-Aranda, Rubén KDPOF

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

Stressed receiver is defined.

SuggestedRemedy

Replace "For 2.5GBASE-AU, receiver sensitivity” with “For 2.5GBASE-AU, stressed receiver sensitivity”. Do similar change for 5, 10, 25 and 50 GBASE-AU, in the following paragraphs.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.9** *P* **128** *L* **16** # 105

Pérez-Aranda, Rubén KDPOF

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

From line 16 through 34, modify the STDFOM values for which the RX sensitivity is measured according to new Table 166-10 of RX characteristics of perezaranda_3cz_02_2205_TXRX_Characteristics.pdf

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

With editorial license

Cl **166** *SC* **166.7.9** *P* **128** *L* **36** # 108

Pérez-Aranda, Rubén KDPOF

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

Equation is not correct.

SuggestedRemedy

Replace “=“ with “<=“

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.10** *P* **128** *L* **48** # 110

Pérez-Aranda, Rubén KDPOF

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

Incorrect reference.

SuggestedRemedy

Replace with "shall be within the limits given in Table 166–10”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.10** *P* **129** *L* **2** # 109

Pérez-Aranda, Rubén KDPOF

Comment Type **ER** *Comment Status* **D** *TXRX Characteristics*

Update figure 166-43 to be consistent with perezaranda_3cz_02_2205_TXRX_Characteristics.pdf

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

With editorial license.

Cl **166** *SC* **166.7.10** *P* **129** *L* **28** # 112

Pérez-Aranda, Rubén KDPOF

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

Not clear specification.

SuggestedRemedy

Replace "The signal being transmitted is asynchronous to the received signal.” with “The signal being transmitted by the PHY under test is asynchronous to the received signal.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.10** *P* **129** *L* **28** # 111

Pérez-Aranda, Rubén KDPOF

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

Receiver sensitivity can only be defined for a complete PHY, but not for a PMD sublayer.

SuggestedRemedy

Replace "to the PMD receiver under test” with “to the PHY receiver under test”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.10.1** *P* **129** *L* **42** # 119

Pérez-Aranda, Rubén KDPOF

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

Nominal symbol rate is of pattern generator

SuggestedRemedy

Replace "of the receiver under test” with “of the test-pattern generator”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.10.1** *P* **129** *L* **46** # 36

Hayashi,Takehiro HAT Labs

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

Typo the number of equation (166-13)

SuggestedRemedy

166-23

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.10.1** *P* **129** *L* **51** # 113

Pérez-Aranda, Rubén KDPOF

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

Some parameters are defined in Table 166-9.

SuggestedRemedy

Replace "specified in Table 166–10” with “specified in Table 166–9 and Table 166-10”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.10.1** *P* **130** *L* **47** # 114

Pérez-Aranda, Rubén KDPOF

Comment Type **TR** *Comment Status* **D** *Technical fix required*

The first step should be configuring the right test pattern.

SuggestedRemedy

Add as first step: “The test-pattern generator is configured to generate specified pattern for stressed receiver sensitivity in Table 166–13 and Table 166–14.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.10.1** *P* **130** *L* **53** # 115

Pérez-Aranda, Rubén KDPOF

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

incorrect register and reference

SuggestedRemedy

Replace with "Local link margin reported in register 3.2350 (see 45.2.3.87e) is lower than 0.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.10.1** *P* **131** *L* **9** # 117

Pérez-Aranda, Rubén KDPOF

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

Incorrect units.

SuggestedRemedy

Replace “(Watts)” with (W)”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.10.1** *P* **131** *L* **11** # 116

Pérez-Aranda, Rubén KDPOF

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

Delete “using test setup defined in Figure 166–44.”. It does not make sense here. Broken reference to figure.

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.10.2** *P* **131** *L* **19** # 118

Pérez-Aranda, Rubén KDPOF

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

Incorrect reference. Primary params are STDFOM, ER and RIN.

SuggestedRemedy

Replace "The primary parameters of the stressed receiver conformance test signals are its stressed TDFOM (STDFOM), and RIN, as specified in 166.7.10.4.” with “The primary parameters of the stressed receiver conformance test signals are its stressed TDFOM (STDFOM), ER, and RIN.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.10.2** *P* **131** *L* **39** # 121

Pérez-Aranda, Rubén KDPOF

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

Incorrect references. The ones provided are to measure AOP and OMAouter with different test patterns.

SuggestedRemedy

Replace "Measure OMAouter and AOP as specified in 166.7.4 and 166.7.3 to calculate gamma_tx = OMAouter/AOP.” with "Measure OMAouter and AOP as specified in 166.7.8.3 and 166.8.5 to calculate gamma_tx = OMAouter/AOP.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.10.2** *P* **131** *L* **50** # 122

Pérez-Aranda, Rubén KDPOF

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

Sinusoidal jitter amplitude has to be adjusted too.

SuggestedRemedy

Replace "Turn on the sinusoidal jitter according to 166.7.10.4," with “Turn on the sinusoidal jitter and adjust its amplitude according to 166.7.10.4,”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.10.2** *P* **131** *L* **27, 43** # 120

Pérez-Aranda, Rubén KDPOF

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

Incorrect reference.

SuggestedRemedy

Replace “Table 166-9” with “Table 166-10”.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.10.3** *P* **132** *L* **15** # 123

Pérez-Aranda, Rubén KDPOF

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

Sentence is confuse.

SuggestedRemedy

Replace "To use an oscilloscope to calibrate the final stressed eye jitter that includes the sinusoidal jitter component” with “To use an oscilloscope to calibrate the final stressed signal that includes the sinusoidal jitter component”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.10.3** *P* **132** *L* **21** # 124

Pérez-Aranda, Rubén KDPOF

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

tolerance test? not defined

SuggestedRemedy

Replace "Running the receiver tolerance test” with “Running the receiver sensitivity test”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.10.4** *P* **132** *L* **35** # 233

Martino, Kjersti Inneos

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

Change wording for clarity of the following: "for the equations the table."

SuggestedRemedy

"for the equations in the table."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.7.10.4** *P* **132** *L* **49** # 125

Pérez-Aranda, Rubén KDPOF

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

Replace KHz with kHz in Table 166-18

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** SC **166.9.1** P **133** L **35** # 37

Hayashi,Takehiro HAT Labs

Comment Type **E** *Comment Status* **D** *Text improvement*

The optical fiber should meet both of requirements

SuggestedRemedy

change "or" to "and"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Replace "The fiber contained within the BASE-AU fiber optic cabling shall comply with the requirements of IEC 60793-2-10 for optical fiber Type A1a.2 (OM3) or the requirements of Table 166–19 where they differ" with
"The fiber contained within the BASE-AU fiber optic cabling shall comply with the requirements of IEC 60793-2-10 for optical fiber Type A1a.2 (OM3) and the requirements of Table 166–19. For parameters where they differ, Table 166–19 prevails."

Cl **166** SC **166.9.1** P **133** L **47** # 129

Pérez-Aranda, Rubén KDPOF

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

It should be effective modal bandwidth

SuggestedRemedy

Replace "Modal bandwidth" with “Effective modal bandwidth” and add foot note: “When measured with the launch conditions specified in Table 166-9”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** SC **166.9.1** P **133** L **47** # 127

Pérez-Aranda, Rubén KDPOF

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

Incorrect units. Replace “MHz.km” with “MHz·km”

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** SC **166.9.1** P **133** L **50** # 128

Pérez-Aranda, Rubén KDPOF

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

Replace “Dispersion slop” with “Chromatic dispersion slope”

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** SC **166.9.1** P **133** L **50** # 126

Pérez-Aranda, Rubén KDPOF

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

Incorrect units. Replace “ps/nm^2.km” with “ps/(nm^2·km)

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** SC **166.9.2.1** P **134** L **10** # 130

Pérez-Aranda, Rubén KDPOF

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

The sentence does not make technical sense.

SuggestedRemedy

Replace "The maximum link distances are calculated based on the allocation of total connection insertion loss shown in Table 166–20.” with "The maximum number of connections are calculated based on the allocation of total connection insertion loss shown in Table 166–20.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.9.2.2** *P* **134** *L* **34** # 38

Hayashi,Takehiro HAT Labs

Comment Type **T** *Comment Status* **D** *Text improvement*

"return loss" is generally used with a positive value.

SuggestedRemedy

change "reflectance" to "return loss" and delete "-" from "-20"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This subclause is consistent with many others -SR clauses.

Cl **166** *SC* **166.14.2** *P* **137** *L* **8** # 235

Marris, Arthur Cadence Design Systems

Comment Type **T** *Comment Status* **D** *External standards*

This subclause is not referencing Annex J.2 as other PHY clauses do, also saying conforming to ISO 26262 is not specifc enogh.

SuggestedRemedy

Consider adding text "Equipment subject to this clause shall conform to the general safety requirements in J.2."

Say exactly which part of ISO 26262 needs to be conformed to or delete the reference to ISO 26262 altogether.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace full paragraph with "Equipment subject to this clause shall conform to the general safety requirements in J.2."

Synchronize wording of Environmental safety and electromagnetic safety subclauses with Clause 149.9.

Cl **166** *SC* **166.14.5** *P* **138** *L* **14** # 143

Pérez-Aranda, Rubén KDPOF

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

Replace "about the productexplicitly defines requirements" with "about the product, where explicitly defines requirements"

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166** *SC* **166.16.5** *P* **144** *L* **27** # 234

Martino, Kjersti Inneos

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

Typo, extra "s" in "LPI is treated ass an error if"

SuggestedRemedy

"LPI is treated as an error if"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166A** *SC* **166A** *P* **154** *L* **1** # 250

Nicholl, Shawn AMD

Comment Type **T** *Comment Status* **D** *RS-FEC*

Add an Annex containing RS(544,522) FEC codeword examples.

SuggestedRemedy

Insert new sub-clause Annex 166A (thus updating existing Annex 166A to Annex 166B). The new sub-clause to contain RS(544,522) FEC codeword examples. Model the new informative sub-clause after Annex 91A.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
It would be appreciated to have proposed text for this Annex.

Cl **166A** *SC* **166A** *P* **154** *L* **1** # 6

Brown, Matt Huawei

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

Missing editorial instruction to add annex.

SuggestedRemedy

Add and editorial note at the top of the page "Insert new Annex 166A as follows:"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166A** *SC* **166A.2** *P* **154** *L* **22** # 257

Ran, Adee Cisco

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

The title includes "LFSR binary scrambler sequence", but the content of Table 166A-1 is not necessarily generated by an LFSR, and is not listed as a binary sequence.

Similarly in Table 166A-2.

SuggestedRemedy

Change the title to "2.5GBASE-U, 5GBASE-U, 10GBASE-U, and 25GBASE-U scrambler sequence".

Change 166A.3 accordingly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the subclause title to "2.5GBASE-U, 5GBASE-U, 10GBASE-U, and 25GBASE-U binary scrambler sequence".

Change 166A.3 accordingly.

Change the annex title to "BASE-U binary scrambler sequence"

Revise other occurences of "LFSR" in the draft accordingly.

Cl **166A** *SC* **166A.2** *P* **154** *L* **26** # 258

Ran, Adee Cisco

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

"Table 166A–1 shows the first and last 2048 bits of tx_lfsr<0:195839>"

The table content is hexadecimal digits, not bits.

Similarly in Table 166A-2.

SuggestedRemedy

Change to "Table 166A–1 shows the hexadecimal representation of the first and last 2048 bits of tx_lfsr<0:195839>"

Change 166A.3 accordingly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166A** *SC* **166A.2** *P* **154** *L* **33** # 18

Hajduczenia, Marek Charter Communications

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

Table 166A–1 uses now standard font for long hex sequence. I suggest to use fixed width font, e.g., Courier New to make the hex code more readable.

SuggestedRemedy

Per comment. The same applies to Table 166A–2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **166A** *SC* **166A.2** *P* **154** *L* **33** # 19

Hajduczenia, Marek Charter Communications

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

Since the LFSR binary scrambler sequences are incomplete (tables show "…"), we need t post complete sequence in binary (machine readable format) and link it

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Only a few of random sequences specified in 802.3 are provided for download in a machine readeable format (e.g. Clause 120 SSPRQ).
However, if considered necessary, the same action needs to be implemented for other test pattern in C/166: SSPR-NRZ, SSPR-PAM4 and pattern for stressed receiver sensitivity.

A total of five files are provided:

C166_G1_LFSR_binary_scrambler_sequence.txt

C166_G2_LFSR_binary_scrambler_sequence.txt

C166_SSPR-NRZ_pattern.txt

C166_SSPR-PAM4_pattern.txt

C166_Stressed_Receiver_Sensitivity_pattern.txt

Cl **166A** *SC* **166A.2** *P* **154** *L* **35** # 259

Ran, Adee Cisco

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

If the intent of the underscore characters in Table 166A-1 is no improve readability, it is hampered by the inconsistent placement of these characters in different rows.

The content would be easier to follow if fixed-width font is used, resulting in alignment of all underscores.

Similarly in Table 166A-2.

SuggestedRemedy

Format the content of the right column in a fixed-width font (e.g., Courier) or use other means to get a similar effect.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **TOC** *SC* **TOC** *P* **13** *L* **1** # 14

Hajduczenia, Marek Charter Communications

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

Something is wrong with indentation of Level 1 headers in TOC. Are you using the latest version?

SuggestedRemedy

Please fix

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.