Cl **126** *SC* **126.3.2.2.16** *P* **98** *L* **43** # i-1

Rolfe, Benjamin Blind Creek Associate

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

"the encoder shall follow the notation described in 126.3.2.2.3"
The intended requirement is not clear. Encoders are frequently described or sometimes represented using a notation, but seldom do encoders follow a notation in my experience.

SuggestedRemedy

For both x and c the leftmost element of the vector is the first bit into the LDPC encoder and the first transmitted bit.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
Change: "For both x and c the encoder shall follow the notation described in 126.3.2.2.3 where the LSB (leftmost element of the vectors x and c) is the first bit into the LDPC encoder and the first transmitted bit."

to: "For both x and c the leftmost element of the vector is the first bit into the LDPC encoder and the first transmitted bit."

Cl **126** *SC* **126.3.2.2.20** *P* **99** *L* **49** # i-2

Rolfe, Benjamin Blind Creek Associate

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

"shall implement" is rather difficult to verify as it requires inspection of the implementation. Elsewhere in the draft the term "shall conform to" is used in similar context, and suggests an expected behavior from the implementation, which is verifiable by observing behavior. "shall conform to" is far better choice of normative language and while boring, consistency does make the standard easier to use.

SuggestedRemedy

Change "shall implement" to "shall conform to"

Response *Response Status* **W**

ACCEPT.

Cl **126** *SC* **126.4.2.5.16** *P* **134** *L* **32** # i-3

Rolfe, Benjamin Blind Creek Associate

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

"shall implement" in this context is difficult to verify, as it requires inspecting the code of the implementation. Elsewhere he term "shall conform to" is used in similar context, and is much better as it suggests the a verifiable behavior produced by the implementation.

SuggestedRemedy

Change "shall implement" to "shall conform to"

Response *Response Status* **W**

ACCEPT.

Cl **126** *SC* **126.4.2.2.1** *P* **122** *L* **46** # i-4

Rolfe, Benjamin Blind Creek Associate

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

"EEE-capable PHYs shall implement a PMA Transmit function that generates the alert signal as defined in
126.4.2.2.1." is wordy and suggests verification of an implementation method rather than an externally visible behavior.

SuggestedRemedy

change to:
"EEE-capable PHYs shall generate the alert signal as defined in 126.4.2.2.1.

Response *Response Status* **W**

ACCEPT.

Cl **126** *SC* **126.4.2.2** *P* **122** *L* **47** # i-5

Rolfe, Benjamin Blind Creek Associate

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

"PHYs that support the fast retrain capability shall implement a PMA Transmit function that generates the link failure signal as defined in
126.4.2.2.2." is wordy and not very good normative language.

SuggestedRemedy

Change to:
PHYs that support the fast retrain capability shall generate the link failure signal as defined in 126.4.2.2.2.

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.4.2.5.14** *P* **131** *L* **17** # i-6

Rolfe, Benjamin — Blind Creek Associate

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

"Shall implement the CRC16 polynomial (x+1)(x15+x+1) of the previous 10 octets,"
The requirement is not clear. This is describing a field in and fields may contain values but do not implement values.
I *think* the intent is to say the field contains a 16-bit CRC value equivalent to the output of figure 126-25, if the input were the previous 10 octets (octet 5 through octet 14 as shown in the figure) and described in the text.
(which is a total of 3 different ways to specify the same normative requirement re which 10 octets are the calculation field for the CRC).

SuggestedRemedy

Change to:
This field shall contain CRC16 calculated over the following octets:
Octet 5<7:0>, Octet 6<7:0>, Octet 7<7:0>, Octet 8<7:0>, Octet 9<7:0>, Octet 10<7:0>, Octet 11<7:0>,
Octet 12<7:0>, Octet 13<7:0> and Octet 14<7:0>.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
Implemented in resolution to comment i-9:
Edit text and figure to show switch and refer to the settings properly as shown in regev_3bz_01_0516.pdf

Cl **126** *SC* **126.4.2.5.14** *P* **131** *L* **21** # i-7

Rolfe, Benjamin — Blind Creek Associate

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

RE: "Afterwards Octet 5 through Octet 14 are used to compute the CRC16 with the switch connected, which is setting CRCgen in Figure 126-25. After all the 10 octets have been processed, the
switch is disconnected (setting CRCout) and the 16 values stored in the delay elements are transmitted in the
order illustrated, first S15, followed by S14, and so on, until the final value S0."
1) I see no switch in figure 126-25, thus "with the switch connected" makes no sense nor does 'the switch is disconnected";
"setting CRCout" also makes little or no sense as this is not used anywhere in normative text.
I think this may be intending to say that the CRC16 field is set to the output of the CRC generator depicted in the figure, and that the value is transmitted so that S15...S0 (which is also shown in the figure) aka highest term first.

SuggestedRemedy

Replace with:
"The CRC16 value is transmitted in the order shown in Figure 126-25, with the highest order term first."

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
Implemented in resolution to comment i-9:
Edit text and figure to show switch and refer to the settings properly as shown in regev_3bz_01_0516.pdf

Cl **126** *SC* **126.4.2.5.6** *P* **128** *L* **38** # i-8

Rolfe, Benjamin — Blind Creek Associate

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

Meaning of "shall communicate" is unclear but I *think* it means that these bits in the field are set to indicate the state of the transmitting transceiver?

SuggestedRemedy

Change "shall communicate" to "shall be set" and add "as follows:" to the end of the sentence.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
Change "communicate" to "indicate"
and add "as follows:" to the end of the sentence.

Cl **126** *SC* **126.4.2.5.14** *P* **131** *L* **17** # i-9

Rolfe, Benjamin — Blind Creek Associate

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

This clause appears to be a cut and past of 55.4.2.5.13 of the base standard.
Suggest rather than replicate the text, reference the existing text on the CRC16.
Doing so would also resolve comments on the technical errors and rather confusing language of 55.4.2.5.13 ;-)

SuggestedRemedy

Delete text and figure and replace with a reference to 55.4.2.5.13.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Edit text and figure to show switch and refer to the settings properly as shown in regev_3bz_01_0516.pdf

Cl **126** *SC* **126.5.2** *P* **150** *L* **39** # i-10

Rolfe, Benjamin — Blind Creek Associate

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

While recycling and reuse is laudable, in this context "use" is more correct use of the English language than "reuse".

SuggestedRemedy

change "reuse" to "use"

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.5.4.4** *P* **156** *L* **33** # i-11

Rolfe, Benjamin — Blind Creek Associate

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

"Each noise source shall have a flat noise spectrum," Appears to be stating a requirement out of scope of the standard (the noise source used to generate signals for the test, which is not defined in this standard)
Also since perfectly 'flat' is an impossibility, a workable definition of 'flat' would be necessary to make this a technically complete and correct requirement.

SuggestedRemedy

Replace "shall" with "should" or if appropriate the slightly more pretentious, "will".

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
Change "Each noise source shall have a flat noise spectrum, with 3 dB bandwidth at least 10 MHz to 200xS MHz and a power spectral density such that at the MDI port of the device under test the power spectral density of the injected noise is –137 dBm/Hz and –127 dBm/Hz..."
to read:
"The injected noise shall have a flat spectrum within the following limits: a 3 dB bandwidth extending over at least 10 MHz to 200xS MHz and a power spectral density such that at the MDI port of the device under test the power spectral density of the injected noise is –137 dBm/Hz and –127 dBm/Hz..."

Cl **126** *SC* **126.9.4** *P* **178** *L* **18** # i-12

Rolfe, Benjamin — Blind Creek Associate

Comment Type **GR** *Comment Status* **A** *Safety*

"shall not result in any safety hazard." is not a precise testable requirement.
"any" should be defined, preferably by reference to an external safety standard.

SuggestedRemedy

Change to "shall not result fire, flame, explosion, exposure to excessive radiation, wild bores, rabid antelopes or extreme political unrest" (my guess at "any")

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
Change "shall not result in any safety hazard." to "shall not preclude conformance with 126.9.1 and 126.9.2."

Edit PICS ENV3, to add Value/Comment: "See ENV1 after exposure to telephone voltages."

Commenter may wish to file one or more maintenance requests because the identical requirements wording (any safety hazard) is used throughout IEEE Std 802.3 for similar BASE-T interfaces. See, e.g.,
1BASE-5 (12.10.2), 10BASE-T (14.7.2.4), 100BASE-T4 (23.9.2.4), 100BASE-T2 (32.10.2.4), DTE Power via MDI (33.7.5), 1000BASE-T (40.9.2.3), 10GBASE-T (55.9.4), and 25G/40GBASE-T (113.9.4)

Cl **FM** *SC* **FM** *P* **1** *L* **27** # i-13

Anslow, Peter — Ciena Corporation

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

http://www.ieee802.org/3/WG_tools/editorial/requirements/words.html has:
Physical Layer (always capped)

SuggestedRemedy

Capitalise Physical Layer:
Page 1, line 27
Page 2, line 2
Page 10, line 46

Response *Response Status* **C**

ACCEPT.

Cl **FM** *SC* **FM** *P* **1** *L* **29** # i-14

Anslow, Peter — Ciena Corporation

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

The draft is now in Sponsor ballot, not WG ballot

SuggestedRemedy

Change "Working Group Ballot" to "Sponsor ballot"

Response *Response Status* **C**

ACCEPT.

Cl **FM** *SC* **FM** *P* **23** *L* **15** # i-15

Anslow, Peter — Ciena Corporation

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

Page 23 does not reflect the latest version of the 802.3 boilerplate.

SuggestedRemedy

Change "Implementors" to "Implementers".

Response *Response Status* **C**

ACCEPT.

Cl **1** *SC* **1.4** *P* **24** *L* **38** # i-16

Anslow, Peter — Ciena Corporation

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

In "See IEEE Std 802.3 Clause", there should be a comma between 802.3 and Clause.

SuggestedRemedy

Change to " "See IEEE Std 802.3, Clause" on page 24, lines 38, 41, and 47, page 26, line 5

Response *Response Status* **C**

ACCEPT.

Cl **1** *SC* **1.4.277b** *P* **26** *L* **3** # i-17

Anslow, Peter — Ciena Corporation

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

The definition for MultiGBASE-T (as inserted by IEEE Std 802.3bq-201x) is in 1.4.277a

SuggestedRemedy

Change the paragraph number to be 1.4.277a

Response *Response Status* **C**

ACCEPT.

Cl **1** *SC* **1.5** *P* **26** *L* **13** # i-18

Anslow, Peter Ciena Corporation

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

IEEE does not capitalise the expansions of abbreviations unless they are proper nouns. Also, http://www.ieee802.org/3/WG_tools/editorial/requirements/words.html has: "signal-to-noise ratio"

SuggestedRemedy

Change "Alien Limited Signal to Noise Ratio" to "alien limited signal-to-noise ratio"

Response *Response Status* **C**

ACCEPT.

Cl **4** *SC* **4.4.2** *P* **27** *L* **15** # i-19

Anslow, Peter Ciena Corporation

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

The "25Gb/s" (as inserted by IEEE Std 802.3by) shown in strikethrough font should have a space between 5 and G

SuggestedRemedy

Change to "25 Gb/s"

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.1** *P* **35** *L* **13** # i-20

Anslow, Peter Ciena Corporation

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

The IEEE style is to not have "subclause" before an existing numbered subclause.

SuggestedRemedy

Change the editing instruction to: "Change the third paragraph of 45.1 as follows:"

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1** *P* **35** *L* **23** # i-21

Anslow, Peter Ciena Corporation

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

In the editing instruction, 1.20 and 1.21 are registers not bits. Also, there is an agreement with the IEEE staff that we should only cite previous amendments where they affect the text being changed and the 802.3by amendment created a reserved row for 1.20 through 1.29

SuggestedRemedy

Change the editing instruction to: "Insert rows for 1.20 and 1.21 and change the reserved row for 1.20 through 1.29 in Table 45-3 (as modified by IEEE Std 802.3by-201x) as follows (unchanged rows not shown):
In the last row of the table, change the strikethrough text to "20"

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.1** *P* **36** *L* **11** # i-22

Anslow, Peter Ciena Corporation

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

In Table 45-4 802.3by created a reserved row: 0 1 1 x = Reserved

SuggestedRemedy

Change the row in strikethrough font to "0 1 1 x = Reserved" (i.e. change the initial "x" to "0")

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.1.3** *P* **36** *L* # i-23

Anslow, Peter Ciena Corporation

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

As this draft is allocating new rates using bits 1.0.5:2, there needs to be a change in the last paragraph of 45.2.1.1.3 as modified by 802.3by is needed.

SuggestedRemedy

Bring 45.2.1.1.3 into the draft and show appropriate changes.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
Bring 45.2.1.13 with editing instruction as follows (underline start and end denoted by /U in comment response):

45.2.1.1.3 Speed selection (1.0.13, 1.0.6, 1.0.5:2)
Change the first sentence of the last paragraph of 45.2.1.1.3 as follows:

When bits 5 through 2 are set to 0010 the use of a 40G PMA/PMD is selected; when set to 0011 the use of a 100G PMA/PMD is selected; when set to 0100 the use of a 25G PMA/PMD is selected/U; when set to 0111 the use of a 5G PMA/PMD is selected; when set to 0110 the use of a 2.5G PMA/PMD is selected/U.

Cl **45** *SC* **45.2.1.4** *P* **36** *L* **21** # i-24

Anslow, Peter Ciena Corporation

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

802.3by has changed Table 45-6

SuggestedRemedy

Change the editing instruction to: "Change the Reserved row for 1.4.15:12 in Table 45-6 (as modified by IEEE Std 802.3by-201x) and insert rows for 1.4.14, 1.4.13, and 1.4.12 below it as follows (unchanged rows not shown):"
In the top row, change the strikethrough ":13" to ":12"
Add a new bottom row: "1.4.12", "Reserved for future speeds", "Value always 0", "RO"

Response *Response Status* **W**

ACCEPT.

Cl **45** *SC* **45.2.1.4.a** *P* **36** *L* **42** # i-25

Anslow, Peter Ciena Corporation

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

802.3by has inserted 45.2.1.4.a for bit 1.4.11, so the subclauses for bits 1.4.14 and 1.4.13 should be 45.2.1.4.aa and 45.2.1.4.ab

SuggestedRemedy

Change the editing instruction to: "Insert 45.2.1.4.aa and 45.2.1.4.ab before 45.2.1.4.a (inserted by IEEE Std 802.3by-201x) as follows:
Change the subclause numbers to 45.2.1.4.aa and 45.2.1.4.ab.

Response *Response Status* **W**

ACCEPT.

Cl **45** *SC* **45.2.1.7.4** *P* **37** *L* **30** # i-26

Anslow, Peter Ciena Corporation

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

In Tables 45-9, 45-10, and 45-12, where two PMDs have a "Description location" in the same subclause, they are in a single row of the table.

SuggestedRemedy

Change the insertions in Tables 45-9, 45-10, and 45-12 to be a single row for each with the two PMD names separated by a comma for Tables 45-9 and 45-10 and separated by "and" for Table 45-12

Response *Response Status* **W**

ACCEPT.

Cl **45** *SC* **45.2.1.10** *P* **38** *L* **15** # i-27

Anslow, Peter Ciena Corporation

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

Bit 1.11.14 is part of the reserved block 1.11.15:13 as modified by 802.3by

SuggestedRemedy

Change the editing instruction to: "Change the Reserved row for 1.11.15:13 in Table 45-14 (as modified by IEEE Std 802.3by-201x) and insert rows for 1.11.14 and 1.11.13 below it as follows (unchanged rows not shown):"
Add a row above the existing row: "1.11.15:13" with :13 in strikethrough font, "Reserved", "Value always zero", "RO"
Remove the text in strikethrough font and change the underlined text to normal font in the existing row
Add a row below the existing row: "1.11.13", "Reserved", "Value always zero", "RO"

Response *Response Status* **W**

ACCEPT.

Cl **45** *SC* **45.2.1.10.a** *P* **38** *L* **29** # i-28

Anslow, Peter Ciena Corporation

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

802.3bw inserted 45.2.1.10.a for bit 1.11.11
802.3by inserted 45.2.1.10.aa for bit 1.11.12
So bit 1.11.14 should be in 45.2.1.10.aaa

SuggestedRemedy

Change the editing instruction to: "Insert 45.2.1.10.aaa before 45.2.1.10.aa (as inserted by IEEE Std 802.3by-201x) as follows:"
Change the new subclause to be 45.2.1.10.aaa

Response *Response Status* **W**

ACCEPT.

Cl **45** *SC* **45.2.1.14g** *P* **38** *L* **43** # i-29

Anslow, Peter Ciena Corporation

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

The subclause for Register 1.21 should be after 45.2.1.14b for Register 1.19 as inserted by 802.3by.
There is no need to call out three subclauses as the two level 5 subclauses are part of the level 4 subclause.
The 802.3bs amendment will be after 802.3bz

SuggestedRemedy

Change the editing instruction to: "Insert 45.2.1.14c after 45.2.1.14b (as inserted by IEEE Std 802.3by-201x) as follows:"
Change the new subclauses to be 45.2.1.14c, 45.2.1.14c.1, and 45.2.1.14c.2
Change Table 45-17g to be Table 45-17c

Response *Response Status* **W**

ACCEPT.

Cl **45** *SC* **45.2.3.4** *P* **44** *L* **3** # i-30

Anslow, Peter Ciena Corporation

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

Table 45-122 has been modified by 802.3by.
Footnote a is not correct

SuggestedRemedy

Change the editing instruction to: "Change the reserved row for 3.4.15:5 and insert rows for 3.4.7, 3.4.6, and 3.4.5 below it in Table 45-3 (as modified by IEEE Std 802.3by-201x) as follows (unchanged rows not shown):
In the first row of the table, change the strikethrough text to "5"
add another row at the bottom of the table for:
"3.4.5", "Reserved", "Value always 0", "RO"
Change footnote a to "RO = Read only"

Response *Response Status* **W**

ACCEPT.

Cl **45** *SC* **45.2.3.4.7** *P* **44** *L* **19** # i-31

Anslow, Peter Ciena Corporation

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

The 802.3bz amendment will be approved before 802.3bs.
802.3by is adding 45.2.3.4.5 for bit 3.4.4 and this register is unusual in that the level 5 subheadings are in order of increasing bit number. Consequently, bit 3.4.6 should be 45.2.3.4.6

SuggestedRemedy

Change the editing instruction to: "Insert 45.2.3.4.6 and 45.2.3.4.7 after 45.2.3.4.6 (as inserted by IEEE Std 802.3by-201x) as follows:"
Renumber the two subclauses accordingly.

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.6** *P* **45** *L* **3** # i-32

Anslow, Peter Ciena Corporation

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

In the editing instruction and Table 45-123, 3.7.2:0 should be 3.7.3:0

SuggestedRemedy

In the editing instruction and Table 45-123, change 3.7.2:0 to 3.7.3:0

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.9a.a** *P* **46** *L* **20** # i-33

Anslow, Peter — Ciena Corporation

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

It is usual in that the Clause 45 level 5 subheadings are in arranged order of decreasing bit number (as is the case for registers 3.20 and 3.24 in the base standard). This means that the headings for bits 3.21.1 and 3.21.0 should come after 45.2.3.9a.1 as inserted for 3.21.2 by 802.3bq.

SuggestedRemedy

Change the editing instruction to: "Insert 45.2.3.9a.2 and 45.2.3.9a.3 after 45.2.3.9a.1 (as inserted by IEEE Std 802.3bq-201x) as follows:"
Renumber the two subclauses to be 45.2.3.9a.2 for 3.21.1 and 45.2.3.9a.3 for 3.21.0.

Response *Response Status* **W**

ACCEPT.

Cl **45** *SC* **45.2.3.13.1** *P* **46** *L* **38** # i-34

Anslow, Peter — Ciena Corporation

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

Thee are several changes that have been made by 802.3by to the text in subclauses 45.2.3.13 and 45.2.3.14 that are not shown in the draft.

SuggestedRemedy

Page 46, line 38 change "10GBASE-R" to "10/25GBASE-R"
Page 47, line 10 change "10GBASE-R" to "10/25GBASE-R"
Page 47, line 25 change "10/40/100GBASE-R" to "10/25/40/100GBASE-R"
Page 47, line 36 change "10GBASE-R" to "10/25GBASE-R"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Implement suggested Remedy AND:
Change editing instruction from
...(as modified by IEEE Std 802.3bq-201x)...
To
...(as modified by IEEE Std 802.3by-201x and IEEE Std 802.3bq-201x)

Cl **45** *SC* **45.2.3.13.1** *P* **46** *L* **38** # i-35

Anslow, Peter — Ciena Corporation

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

45.2.3.13.1 in 802.3bq contains "in 55.3.6.1 for 10GBASE-T", which is unchanged from the base standard.
In 802.3bz D3.0, this text is shown as "in 55.3.7.1 for 10GBASE-T".
However, 55.3.6.1 is "State diagram conventions" and does not contain a "PCS_status" variable, while 55.3.7.1 "Status" does.

SuggestedRemedy

change 55.3.7.1 to be underlined and add 55.3.6.1 in strikethrough.

Response *Response Status* **W**

ACCEPT.

Cl **45** *SC* **45.2.7** *P* **48** *L* **6** # i-36

Anslow, Peter — Ciena Corporation

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

The register names being modified in Table 45-200 for 7.61 and 7.63 do not match the names in 45.2.7.14 and 45.2.7.14ab

SuggestedRemedy

In Table 45-200, change the two instances of "LP" to "link partner"

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.7.13** *P* **51** *L* **48** # i-37

Anslow, Peter — Ciena Corporation

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

When changing the title of Table 45-210, there is no need to show the heading row. See 802.3by Table 45-74 etc.

SuggestedRemedy

Remove the heading row and just show the table title for Table 45-210 and Table 45-211

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.7.14aa** *P* **53** *L* **2** # i-38
Anslow, Peter Ciena Corporation

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

In the editing instruction "between 45.2.7.14" should be "after 45.2.7.14"

SuggestedRemedy

Change "between 45.2.7.14" to "after 45.2.7.14""

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.7.14a** *P* **54** *L* **23** # i-39
Anslow, Peter Ciena Corporation

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

In the editing instruction "Table 45-211c" should be "Table 45-211a"

SuggestedRemedy

Change "Table 45-211c" to "Table 45-211a"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Implement suggested remedy.
Also Change "Insert Table 45-211b" to "Insert Tabel 45-211ab" on Page 54 Line 1

Cl **45** *SC* **45.2.7.14b.a** *P* **55** *L* **32** # i-40
Anslow, Peter Ciena Corporation

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

Editing instruction:
"Insert two new subclauses 45.2.7.14b.a and 45.2.7.14b.2 2.5GBASE-T and 5GBASE-T Link Partner THP Bypass Request bits"
should be:
"Insert 45.2.7.14b.a and 45.2.7.14b.b before 45.2.7.14b.1 (as inserted by IEEE Std 802.3bq-201x) as follows:"

SuggestedRemedy

Change to:
"Insert 45.2.7.14b.a and 45.2.7.14b.b before 45.2.7.14b.1 (as inserted by IEEE Std 802.3bq-201x) as follows:"

Response *Response Status* **C**

ACCEPT.

Cl **78** *SC* **78.3** *P* **63** *L* **41** # i-41
Anslow, Peter Ciena Corporation

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

78.3 is not a clause in IEEE terminology.
On line 50 126.4.2.5.10 is not a clause.

SuggestedRemedy

delete "clause" on line 41 and on line 50

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.1.3** *P* **74** *L* **3** # i-42
Anslow, Peter Ciena Corporation

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

The IEEE style guide defines a multiplication sign as x, not *

SuggestedRemedy

In Figure 126-2 change 4 instances of * to the correct multiply sign (Ctrl-q 0)

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.3.6.1** *P* **108** *L* **5** # i-43
Anslow, Peter Ciena Corporation

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

"is comprised of" is poor English.

SuggestedRemedy

Change to "is composed of"

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.5.2** *P* **149** *L* **23** # i-44

Anslow, Peter — Ciena Corporation

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

In "Pseudo random test mode" the "Pseudo-random" should be hyphenated.
In 126.8.2.2 page 176, line 29 "pseudo random data" should be "pseudo-random data"

SuggestedRemedy

Change "Pseudo random" to "Pseudo-random".
On page 176, line 29 change "pseudo random data" to "pseudo-random data"

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.5.4.3** *P* **156** *L* **18** # i-45

Anslow, Peter — Ciena Corporation

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

There should be a non-breaking space (Ctrl space) between a number and its unit.

SuggestedRemedy

Change 6dBm to 6 dBm using a non-breaking space.

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.7.2.4.1** *P* **165** *L* **32** # i-46

Anslow, Peter — Ciena Corporation

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

The value specified in 126.5.4.1 is 10^-12, so it is a bit error ratio not a bit error rate (errors per unit time).

SuggestedRemedy

Change "bit error rate" to "bit error ratio"

Response *Response Status* **W**

ACCEPT.

Cl **126** *SC* **126.7.3.1** *P* **169** *L* **16** # i-47

Anslow, Peter — Ciena Corporation

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

IEEE does not capitalise titles or abbreviation expansions unless they are proper nouns.
Signal-to-noise should be hyphenated

SuggestedRemedy

In the title of 126.7.3.1, change "Alien Crosstalk Limited Signal-to-Noise Ratio Criteria" to "Alien crosstalk limited signal-to-noise ratio criteria".
On page 174, line 24 change "the Alien Signal to Noise Ratio" to "the alien signal-to-noise ratio"

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.7.3.1** *P* **174** *L* **19** # i-48

Anslow, Peter — Ciena Corporation

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

minus signs should be em-dashes

SuggestedRemedy

In Table 126-23, change the minus signs to em-dashes (Ctrl-q shift P)

Response *Response Status* **C**

ACCEPT.

Cl **1** *SC* **1.4.129** *P* **25** *L* **20** # i-49

Obara, Satoshi — FUJITSU

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

1000BASE-T is missing. If 1000BASE-T is not included, "Clause 40" in line 19 should be removed.

SuggestedRemedy

Insert "1000BASE-T," before "2.5GBASE-T" or remove "Clause 40" in line 19.

Response *Response Status* **C**

REJECT.
This issue is the subject of maintenance request 1285 on IEEE Std 802.3-2015, and request 1285 has the status "ready for ballot".

Cl **1** *SC* **1.4.130** *P* **25** *L* **28** # i-50

Obara, Satoshi FUJITSU

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

1000BASE-T is missing. If 1000BASE-T is not included, "Clause 40" in line 27 should be removed.

SuggestedRemedy

Insert "1000BASE-T," before "2.5GBASE-T" or remove "Clause 40" in line 27.

Response *Response Status* **C**

REJECT.
This issue is the subject of maintenance request 1285 on IEEE Std 802.3-2015, and request 1285 has the status "ready for ballot".

Cl **1** *SC* **1.4.131** *P* **25** *L* **37** # i-51

Obara, Satoshi FUJITSU

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

1000BASE-T is missing. If 1000BASE-T is not included, "Clause 40" in line 36 should be removed.

SuggestedRemedy

Insert "1000BASE-T," before "2.5GBASE-T" or remove "Clause 40" in line 36.

Response *Response Status* **C**

REJECT.
This issue is the subject of maintenance request 1285 on IEEE Std 802.3-2015, and request 1285 has the status "ready for ballot".

Cl **1** *SC* **1.4.131a** *P* **25** *L* **47** # i-52

Obara, Satoshi FUJITSU

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

1000BASE-T is missing. If 1000BASE-T is not included, "Clause 40" in line 46 should be removed.

SuggestedRemedy

Insert "1000BASE-T," before "2.5GBASE-T" or remove "Clause 40" in line 46.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Replace "100BASE-T" with "100BASE-T4, 100BASE-TX"
Insert "1000BASE-T," before "2.5GBASE-T"
(mark it with underline as it is missing from 802.3bq)
Note - 1.4.131a is not part of maintenance request 1285.

Cl **31B** *SC* **31B.3.7** *P* **197** *L* **40** # i-53

Bains, Amrik

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

41 pause quantum bit time is incorrect for 5Gb/s as specified in bains_3bz_02_0316.pdf due to error in calculation

SuggestedRemedy

41 pause quantum bit time should be 42 pause quantum

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.1.3.3** *P* **77** *L* **40** # i-54

Yu, Jerome

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

The alert signal alignment which begins on a LDPC 2-frame 256 4D-symbol boundary is inconsistent with the other chapter in the base standard. Such as following:

1. P100, Line 37 (begins on a LDPC frame boundary)
2. P122, Line 54 (begins on a LDPC frame boundary)
3. P120, Figure 126-18 EEE transmit state diagram

SuggestedRemedy

1.Replace "begins on a LDPC frame boundary" with "begins on a LDPC 2-frame 256 4D-symbol boundary aligned to the inversion on pair A during PMA training" for P100 Line 37 and P122 Line 54.

2. Creat a new variable "ldpc_two_frame_done" which aligned to the inversion on pair A during PMA training. Replace all "ldpc_frame_done" with "ldpc_two_frame_done" in Figure 126-18 EEE transmit state diagram.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See presentation Graba_3bz_1_0516.pdf

Implement commenters suggested remedy and:
Change Sleep description on page 100, lines 2-6 to read (see slide 3 of Graba_3bz_1_0516.pdf where edits to existing text are shown in red): "If the sleep signal begins on an even LDPC frame boundary, then it contains 18 full LDPC frames each composed entirely of LDPC encoded LP_IDLE blocks. If the sleep signal does not begin on an even LDPC frame boundary, then it contains one to two LDPC frames partially composed of LP_IDLE blocks followed by 18 LDPC frames fully composed of LP_IDLE blocks."

Also, page 124 line 7 from "on a LDPC frame boundary" to "on an even LDPC frame boundary"

Cl **126** *SC* **126.4.5.2** *P* **141** *L* **38** # i-55

Yu, Jerome

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

1 complete quiet-refresh signal periods for 5G is:
320ns(1 LDPC frame time at 5G)*512(total LDPC frame count in 1 complete quiet-refresh signaling) = 163.84us

So, 50 complete quiet-refresh signal periods for 5G is:
50*163.84us = 8.192ms

SuggestedRemedy

Change 16.384/S ms to 8.192/S ms

Response *Response Status* **C**

ACCEPT.

Cl **46** *SC* **46.1** *P* **59** *L* **6** # i-56

Marris, Arthur Cadence Design Syst

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

Clause 46 in the base standard mandates implementation of link fault signalling.

For 2.5G PHYs some of which will be re-using 1000BASE-X PCS encoding it will be difficult to implement link fault signalling as Clause 36 has no way of encoding sequence ordered sets.

This is also an issue for the serial MII interface which for 2.5G can be expected to be speeded up SGMII.

The fact that the questions around SGMII are not addressed or mentioned in the standard is likely to lead to inter-operability issues between SoCs and 2.5GBASE-T PHYs

SuggestedRemedy

Make support of link fault signalling optional at 2.5 Gb/s.

Make fast retrain optional at 2.5Gb/s.

Add some informative text in Clause 46 about how XGMII may be implemented over a serial interface.

Response *Response Status* **W**

REJECT.
Fast retrain is already optional (see 126.1).
Providing informative text on alternative implementations of XGMII would expand the scope of the project beyond its PAR, and lead to the confusion caused by an incomplete and informative specification rather than an interoperable one.

Making the link fault signalling optional would create additional interoperability issues because no signalling is defined to communicate options selected in PHY training to the MAC. This could create circumstances where 2.5G PHYs with the fast retrain option are mated with noninteroperable MACs without clear distinction. Describing implementations is outside the scope of the standard.

Cl **46** SC **46.3.1.1** P **60** L **11** # i-57
Marris, Arthur Cadence Design Syst

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

For 10G speeds and above the clock precision is defined as 100 ppm rather than 0.01%. 0.01% and 100 ppm are equivalent.

SuggestedRemedy

For consistency with other parts of the standard and in particular Clause 106 please change:
"0.01%"
to:
"100 ppm"
on page 60, line 11 and
on page 60, line 21 and
on page 61, line 40 and
on page 61, line 43

Response *Response Status* **W**

ACCEPT.

Cl **AnnexA** SC **exA** P **191** L **1** # i-58
Laubach, Mark Broadcom Limited

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

The editor's note was not followed when constructing Draft 3.0. Annex A should have been removed from the draft as it contains no new bibliographic entries.

SuggestedRemedy

Follow the instructions in the editor's note.

Response *Response Status* **C**

ACCEPT.

Cl **46** SC **46.6.3.1** P **61** L **19** # i-59
Zimmerman, George Aquantia, and CommS

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

10, 5, and 2.5 Gb/s all appear as optional and a 4th item requires at least one of them.

In 21.6.2 there is a special status code for these cases: O.<n> means "optional field/function, but at least one of the group of options labeled by the same numeral <n> is required".

SuggestedRemedy

Change status of G1, G2 and G3 to "PHY:O.1" and delete G4.

Response *Response Status* **C**

ACCEPT.

Cl **0** SC **0** P **67** L **1** # i-60
Zimmerman, George Aquantia, and CommS

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

Inconsistent spelling of signaling (42 instances) vs. signalling (8 instances). I think the former is the norm in 802.3.

SuggestedRemedy

Change all "signalling" to "signaling".

Response *Response Status* **C**

ACCEPT.

Cl **126** SC **126.1** P **71** L **14** # i-61
Zimmerman, George Aquantia, and CommS

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

"This clause defines the types 2.5GBASE-T, and 5GBASE-T PCS, PMA sublayers, and Medium Dependent Interfaces (MDI)"

The placement of commas in this sentence seems incorrect.

SuggestedRemedy

Change to
"This clause defines type 2.5GBASE-T and 5GBASE-T PCS, PMA sublayers, and Medium Dependent Interfaces (MDI)".

(Aligning with clause 113)

Response *Response Status* **C**

ACCEPT.

Cl **126** SC **126.1.3.1** P **76** L **18** # i-62
Zimmerman, George Aquantia, and CommS

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

"See 126.5.3.4 for transmit PSD mask definition"

What does PSD mask have to do with the PCS? PCS deals with bits and symbols. The PSD is controlled by the PMA.

SuggestedRemedy

P76 L18:
Change "See 126.5.3.4 for transmit PSD mask definition." to read:
"Implementers are cautioned that insufficient randomization can impact meeting PMA PSD mask requirements (see 126.5.3.4 for transmit PSD mask definition)."

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.1.4** *P* **78** *L* **39** # i-63

Zimmerman, George Aquantia, and CommS

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

I don't see how figure 126-5 is relevant for the signaling and modes. Perhaps a reference to Figure 126-26 or subclause 126.3.2.2 would be more helpful?

SuggestedRemedy

Replace "See Figure 126-5" with See 126.3.2.2 for description of PCS transmit modes."

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.3.2.2** *P* **90** *L* **20** # i-64

Zimmerman, George Aquantia, and CommS

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

"(The appended zeros are then replaced by vendor discretionary randomized bits) and joint mapped into a transmit LDPC frame of PAM16 symbols"

1. What is "joint mapped"?
2. Figure 126-6 shows the LDPC frame as consisting of bits, not PAM16 symbols
3. According to 126.3.2.2.18 the whole LDPC frame is mapped to PAM16 symbols - so not just the appended zeros or their replacement bits.

SuggestedRemedy

Change the sentence to
"(The appended zeros are then replaced by vendor discretionary randomized bits). The resulting 2048-bit LDPC frame is then mapped into PAM16 symbols".

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.3.2.2.1** *P* **91** *L* **3** # i-65

Zimmerman, George Aquantia, and CommS

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

"The PCS maps XGMII signals into 65-bit blocks inserted into an LDPC frame, and vice versa, using a
65B-LDPC coding scheme"

This process should probably be described as "translation" since it is much more complex than mapping (there is no simple mapping between an XGMII transfer and any resulting bits in the LDPC frame).

Alsom "and vice versa" isn't clear and seems incorrect - in the receive direction these blocks are extracted from an LDPC frame (they were inserted by the remote PCS...)

SuggestedRemedy

Change "The PCS maps XGMII signals into 65-bit blocks inserted into an LDPC frame, and vice versa, using a
65B-LDPC coding scheme." to:
"The PCS translates between XGMII signals and 65-bit blocks inserted within an LDPC frame, using a 65B-LDPC coding scheme."

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.3.2.2.3** *P* **91** *L* **35** # i-66

Zimmerman, George Aquantia, and CommS

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

Hexadecimal is a notation for a bit pattern (or binary value). A hexadecimal number does not have an LSB - its binary equivalent does.

SuggestedRemedy

Change "...are shown as hexadecimal values. The LSB of the hexadecimal value represents..."
to
"...are shown in hexadecimal notation. The LSB
of the equivalent binary value represents..."

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.3.2.2.4** *P* **91** *L* **44** # i-67

Zimmerman, George Aquantia, and CommS

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

"these figures" refer only to figure 126-6.

SuggestedRemedy

Change to "this figure".

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.3.2.2.5** *P* **93** *L* **1** # i-68

Zimmerman, George Aquantia, and CommS

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

Figure 126-7 does not include the conversion from the 4D-PAM16 groups to a bit pattern (counterpart of "Bit mapper" and possibly PAM16 symbol distribution in figure 126-6).

SuggestedRemedy

Show the conversion from 4D-PAM16 to bits out of the LDPC decoder

Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Conversion to bits is within the decoder, and is shown by the next block being explicitly labeled as 'decoded bits', confusion is generated by the block labeled "replace last 97 bits in frame with zeros".

Edit Figure 126-7 as follows:
Remove block "Replace last 97 bits in frame with zeros", and
Add Note to figure:
"Note - Conversion from 4DPAM-16 symbols occurs in the LDPC decoding process. Additionally, bits 1724 through 1820 were replaced with zeros in rx_4D-PAM16<107> through rx_4D-PAM16<113> during the LDPC encoding process."

Cl **126** *SC* **126.3.2.2.19** *P* **99** *L* **36** # i-69

Zimmerman, George Aquantia, and CommS

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

This subclause describes a function called "65B-LDPC framer" that does not apper in the figure 126-6. The figure includes a much simpler "Bit mapper". The thing that "adapts between the 65-bit width of the 65B blocks and the 4D-PAM16 width of the PMA" is the LDPC encoder which was already described in 126.3.2.2.2 and later subclauses.

SuggestedRemedy

Delete subclause 126.3.2.2.19.

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.3.2.3.1** *P* **102** *L* **9** # i-70

Zimmerman, George Aquantia, and CommS

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

Isn't PMA_UNITDATA.request used for sending data? Should it be PMA_UNITDATA.indication for synchronization of received data?

Also in 126.3.2.3, P101 L34
(same in many similar clauses... but seems incorrect)

SuggestedRemedy

Change the indicated usages. Editor to check other uses of PMA_UNITDATA.indication and PMA_UNITDATA.request in clause 126 to ensure correct usage with PCS transmit and receive.

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.3.2.3.1** *P* **102** *L* **10** # i-71

Zimmerman, George Aquantia, and CommS

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

rx_data-group is not defined; it is only shown in figure 126-7 but that doesn't provide more information or clarity.

Based on the context it appears to stand for a specific value of the rx_symb_vector parameter of a PMA_UNITDATA.indication primitive, but the latter does not seem to include pair swapping and polarity correction.

It appears to be rx_symb_vector.

SuggestedRemedy

Replace rx_data-group with rx_symb_vector.

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.3.2.3.3** *P* **102** *L* **53** # i-72

Zimmerman, George Aquantia, and CommS

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

Invalid blocks defined in the receive function should be mostly (or only) blocks included in uncorrected LDPC frames (where the parity checks fails). The other conditions are either irrelevant, or impossible with a compliant partner. See four comments on a similar issue in 802.3bq D3.2 (113.3.2.3.3) for more details.

SuggestedRemedy

Use suggested remedies of similar comments on 802.3bq D3.2. See 802.3bq r-02-1, r-02-2, and r-02-4.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
P102 L53
Delete:
"Invalid blocks are replaced by error."
and insert at end of subclause (P103 L10):
"R_BLOCK_TYPE of an invalid block is set to E."

(P103 L4)
Delete list item d:
d)The set of eight XGMII characters does not have a corresponding block format in Figure 126-8.

P 104 L5 (item E)
Change "The block contains the payload of an invalid received PHY frame..."
to "The block contains information from the payload of an invalid received PHY frame…"

Rationale:
"error" is not a block type, but is implemented by setting R_BLOCK_TYPE to E

List items a, b, and c can occur as the result of a (presumably rare) data error which might be undetected by other means.

R_BLOCK_TYPE being E is the result of an invalid block, not an invalid block type in itself.

Cl **126** *SC* **126.3.6.2.2** *P* **109** *L* **5** # i-73

Zimmerman, George Aquantia, and CommS

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

Variables such as rx_raw<71:0> are already defined using ranges of bits. "RXC<0> through RXC<3>" can be shortened to "RXC<3:0>", and similarly for the ranges of rx_raw bits and RXD bits. This will make the definition shorter and clearer, without need for repeating "respectively".

Similarly for the text in the definition of tx_raw<71:0> (L18).

SuggestedRemedy

Per comment.

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.6.1** *P* **157** *L* **39** # i-74

Zimmerman, George Aquantia, and CommS

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

The second "shall" (shall be capable of operating as MASTER or SLAVE) does not just apply to the auto-negotiation which is what this subclause deals with - it has implications on the whole PHY.

This normative statement should instead appear in the introductory subclause 126.1.3 - which currently has a milder statement: "A 2.5GBASE-T or 5GBASE-T PHY can be configured either as a MASTER PHY or as a SLAVE PHY".

A similar comment was submitted against 802.3bp D3.1 (r01-10), suggested remedy is based on its disposition.

SuggestedRemedy

Delete "and shall be capable of operating as MASTER or SLAVE".

Change the first sentence of the second paragraph of 126.1.3 (currently starting with "A 2.5GBASE-T or 5GBASE-T PHY can be configured") to:
"A 2.5GBASE-T or 5GBASE-T PHY shall be capable of operating as either MASTER PHY or SLAVE PHY".
Change PICS item MF2 accordingly (move to another PICS table).

Response *Response Status* **C**

REJECT.
Requirement is clear as is, and readers familiar with other 802.3 BASE-T standards will expect to find it here.
Unlike in IEEE Std 802.3bp-2016, autonegotiation is mandatory for IEEE P802.3bz PHYs.

Cl **126** *SC* **126.7.3.1** *P* **171** *L* **29** # i-75

Zimmerman, George Aquantia, and CommS

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

The legend under the equation 126-27 does not match the equation (which does not have any frequency term). The table referred is titled "Template PSD for disturbing link segment" which seems unrelated, and anyway it does not define a frequency range.

SuggestedRemedy

Delete "where fmin and fmax are given in Table 126-22" (leave period for full stop after equation 126-27).
Repeat deletion on P173 L15-16 (step 3d, after equation 126-32).

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Implement suggested remedy. Table referenced in deleted text is Table 126-20, not 126-22.
Duplicates resolution of comments i-97 and i-100

Cl **31B** *SC* **31B.3.7** *P* **197** *L* **25** # i-76

Zimmerman, George Aquantia, and CommS

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

The text listed here is not aligned with the updated text in 802.3-2015. Specifically, all instances of "pause_quantum bit times" should be "pause_quanta" instead.

The added paragraphs should be modified similarly.

Comment also applies to 31B.4.6 PICS table.

SuggestedRemedy

Bring the text to sync with the 2015 revision, or alternatively omit the base text and specify only insertion point.

In the new paragraphs, change "pause_quantum bit times" to "pause_quanta".

Change PICS comments in 31B.4.6 accordingly.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Align to 802.3-2015:
P197 L14: Change editing instruction to read:
"Insert new fifth and sixth paragraphs to 31B.3.7, between paragraphs beginning "At an operating speed of 1000 Mb/s," and "At operating speeds of 10 Gb/s," as shown:"
Delete P197 L16 through 33, and P197 L42 through P198 L3 (unchanged text from IEEE Std 802.3)
Change inserted text (new paragraphs inserted by IEEE P802.3bz):
P197 L34 through L41 - remove underline
P197 L36 Change "34 pause_quantum bit times" to "34 pause_quanta"
P197 L40 Change "41 pause_quantum bit times" to "41 pause_quanta"
After inserted sixth paragraph, add new editing instruction:
"Change list following existing 9th (new 11th) paragraph in 31B.3.7 to add 2.5Gb/s and 5Gb/s, before entry for 10 Gb/s (using 10GBASE-T) as shown:"
(text in IEEE P802.3bz D2.1 P198 L4 through L19 is unchanged)
P200 L16 through 40 (31B.4.6 PICS)
Change Value/Comments in TIM2-TIM8 to align with IEEE Std 802.3-2015:
(TIM2) "Delay at MII <= one pause quantum"
(TIM3) "Delay at MII <= one pause quantum + 64 BT"
(TIM4) "Delay at MII <= two pause quanta"
(TIM4a) "Delay at MDI <= 34 pause quanta"
(TIM4b) "Delay at MDI <= 41 pause quanta"
(TIM5) "Delay at MDI <= 60 pause quanta"
(TIM6) "Delay at MDI <= 74 pause quanta"
(TIM7) "Delay at MDI <= 118 pause quanta"
(TIM8) "Delay at MDI <= 394 pause quanta"

Cl **46** *SC* **46.3.1.1** *P* **60** *L* **10** # i-77

Zimmerman, George Aquantia, and CommS

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

TX_CLK frequency is changed from the prior exact specification "156.25 MHz +/- tolerance" to "one-sixty-fourth of the MAC transmit data rate +/- tolerance".

But the MAC transmit data rate is not specified in this clause in terms of an absolute clock frequency (Hz and b/s are different units).

One can argue that the MAC transmit data rate is derived from TX_CLK rather than the other way around, and the actual MAC transmit data rate has the same value as TX_CLK with no tolerance. This is not necessarilty the same as the (nominal) bit rate associated with the MAC.

The term "bit rate" is explicitly defined (1.4.117) and may be used here instead of "MAC transmit data rate" which is undefined.

As a side note, "one-sixty-fourth" is longer and harder to read than "1/64". The latter format is used for similar definitinons in clauses 51, 59 and annexes 69A, 83E.

A similar issue exists in the specification of RX_CLK frequency in 46.3.2.1.1.

SuggestedRemedy

Change "The TX_CLK frequency shall be one-sixty-fourth of the MAC transmit data rate +/-0.01%."

To
"The TX_CLK frequency shall be 1/64 x f_MAC +/-0.01%, where f_MAC is the frequency (in Hz) corressponding to the MAC's nominal bit rate."

Alternatively, specify all 3 cases explicitly as frequencies in a new table.

Apply same remedy for RX_CLK in 46.3.2.1.

Change value/comment of FS2 and FS9 accordingly.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change "The TX_CLK frequency shall be one-sixty-fourth of the MAC transmit data rate +/-0.01%."

To
"The TX_CLK frequency shall be 1/64 x f_MAC +/- 100ppm, where f_MAC is the frequency (in Hz) corresponding to the MAC's nominal bit rate."

Apply same remedy for RX_CLK in 46.3.2.1.

Change value/comment of FS2 and FS9 accordingly.

Cl **126** *SC* **126.7.3.1** *P* **169** *L* **30** # i-78

Zimmerman, George Aquantia, and CommS

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

Readers may be confused at the inclusion of 1G and 10GBASE-T as disturbers. More explanatory text is necessary.

SuggestedRemedy

The combinations of signalling used on the disturbing link segments is intended to provide a worst-case set of interfering power spectral densities which may be present. Actual implementations may not have the worst case combination, and, may not include all of the combinations. The use of the 1000BASE-T disturbing PSD should be equivalent to coexistence with either 100BASE-TX or 1000BASE-T as a distubing PSD. The use of 10GBASE-T as a disturber for 5GBASE-T is because in some cases, 10GBASE-T may be the worst-case disturber, and may be functional in the environment due to lack of other interference. It is noted that while the ALSNR criterion described here is a sufficient condition to ensure that the alien crosstalk environment allows 2.5GBASE-T or 5GBASE-T operation, it is not a necessary condition, and it is to be expected that links will operate in many conditions where the ALSNR criterion is not met due to variation in the interference environment.

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **126** *SC* **126.7.3.1** *P* **169** *L* **30** # i-79

Zimmerman, George Aquantia, and CommS

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

The text looks like TSB-5021 specifies which signalling rates to consider, making 802.3bz incomplete or perhaps conflicting on the subject.

SuggestedRemedy

Change "The selection of the number..." to "Guidelines for evaluating the ALSNR criterion in the field, including the selection of the number..."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change "The selection of the number..." to "Guidelines for evaluating the ALSNR criterion in installed cabling, including the selection of the number..."

(aligns with the title of TSB-5021)

Cl **126** *SC* **126.3.2.2.5** *P* **93** *L* **37** # i-80

Zimmerman, George — Aquantia, and CommS

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

Figure 126-7 shows last 97 bits of the received frame being replaced by zeros. This is incorrect according to the text - the last 97 bits would be the parity check bits added by the LDPC encoder. The vendor discretionary bits (last 97 of the information word before the parity checks are added) in the rx_4D-PAM16 symbols should be the ones replaced.

SuggestedRemedy

Replace: "Replace last 97 bits in frame with zeros" with "Replace bits 1724 through 1820 with zeros in rx_4D-PAM16<107> thorough rx_4D-PAM16<113>"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Implemented by comment i-68:
ACCEPT IN PRINCIPLE. Conversion to bits is within the decoder, and is shown by the next block being explicitly labeled as 'decoded bits', confusion is generated by the block labeled "replace last 97 bits in frame with zeros".

Edit Figure 126-7 as follows:
Remove block "Replace last 97 bits in frame with zeros", and
Add Note to figure:
"Note - Conversion from 4DPAM-16 symbols occurs in the LDPC decoding process. Additionally, bits 1724 through 1820 were replaced with zeros in rx_4D-PAM16<107> through rx_4D-PAM16<113> during the LDPC encoding process."

Cl **126** *SC* **126.1** *P* **71** *L* **28** # i-81

Zimmerman, George — Aquantia, and CommS

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

fast retrain is no longer advertised via autonegotiation, it is advertised in the infofields during startup. "Configurations wishing to disable fast retrain on the link may do so by advertising lack of support during auto-negotiation"

SuggestedRemedy

Change "during autonegotiation" to "during link startup"

Response *Response Status* **C**

ACCEPT.

Cl **4** *SC* **4.4.2** *P* **27** *L* **44** # i-82

Hajduczenia, Marek — Bright House Network

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

Missing serial comma

SuggestedRemedy

Change "For 2.5 Gb/s, 5 Gb/s, 10 Gb/s and 25 Gb/s operation" to "For 2.5 Gb/s, 5 Gb/s, 10 Gb/s, and 25 Gb/s operation" - use the underline for comma after "10 Gb/s"

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.7** *P* **45** *L* **33** # i-83

Hajduczenia, Marek — Bright House Network

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

"aRO = Read only, LH = Latching high" - Table 45-124 does not contain "LH" designator right now

SuggestedRemedy

Remove ", LH = Latching high" from footnote to Table 45-124. No need to show it. Scrub remaining tables in Clause 45 to NOT list designators that are listed in tables.

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.9a.a** *P* **46** *L* **23** # i-84

Hajduczenia, Marek — Bright House Network

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

Avoid undefined bit references: "If the device supports EEE operation for 5GBASE-T as defined in 126.1.3.3, this bit shall be set to one."

SuggestedRemedy

Change "If the device supports EEE operation for 5GBASE-T as defined in 126.1.3.3, this bit shall be set to one." to "If the device supports EEE operation for 5GBASE-T as defined in 126.1.3.3, bit 3.21.1 shall be set to one."
Similar change in 45.2.3.9a.b. Scrub the remainder of Clause 45 to make sure that such bit references are always explicit. Update PICS as needed.
Similar issues in 45.2.7.14aa.1, 45.2.7.14aa.2

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.13.4** *P* **46** *L* **50** # i-85

Hajduczenia, Marek — Bright House Network

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

"55.3.6.1 for 10GBASE-T, and 113.3.6.2.2 for 25GBASE-T and 40GBASE-T." - missing "in" before "113.3.6.2.2"

SuggestedRemedy

For consistency with other locations in this draft and base standard, change "55.3.6.1 for 10GBASE-T, and 113.3.6.2.2 for 25GBASE-T and 40GBASE-T." to "55.3.6.1 for 10GBASE-T, and >>in<<113.3.6.2.2 for 25GBASE-T and 40GBASE-T."
Inserted text marked with >><<

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.7.10.4ca** *P* **49** *L* **29** # i-86

Hajduczenia, Marek — Bright House Network

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

PHY name is broken across lines: "5GBASE-T"

SuggestedRemedy

Please make sure that PHY names are not broken across lines, disabling line break on "-" symbol in PHY names.
Alternatively, manually insert forced line break before PHY name in cases where PHY name breaks across lines

Response *Response Status* **C**

ACCEPT.

Cl **46** *SC* **46.6.3** *P* **61** *L* **10** # i-87

Hajduczenia, Marek — Bright House Network

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

No need to break the instructions into multiple lines

SuggestedRemedy

Combine "Change row G1 and
Insert Rows G2, G3, and G4 in 46.6.3.1 as follows" into a single line

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Implement with changes in comment i-59, which delete G4.

Cl **46** *SC* **46.6.3.1** *P* **61** *L* **19** # i-88

Hajduczenia, Marek — Bright House Network

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

I believe optional features have Support list YES, NO, N/A, and mandatory features: YES and N/A

SuggestedRemedy

For G1, G2, and G3, please add NO [] option to Support column

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Discuss with comment i-59
Editor's Note: added after comment resolution was complete
Resolved by comment i-59:
ACCEPT
Change status of G1, G2 and G3 to "PHY:O.1" and delete G4.

Cl **126** *SC* **126.7.2** *P* **164** *L* **24** # i-89

Moffitt, Bryan — CommScope

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

How can it be equivalent to two things that are not equivalent?

SuggestedRemedy

Change to: The link segment transmission parameters for 2.5GBASE-T are met by ISO/IEC 11801 Class D and ANSI/TIA-568-C.2 Category 5e. Same for the next sentence.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
IEEE P802.3bz D2.0 2.5G/5GBASE-T Initial Working Group ballot comment: # 380 was not fully implemented. It was to have deleted use of equivalent.

Delete: The link segment transmission parameters for 2.5GBASE-T are equivalent to ISO/IEC 11801 Class D and ANSI/TIA-568-C.2 Category 5e. The link segment transmission parameters for 5GBASE-T are equivalent to ISO/IEC 11801 Class D and ANSI/TIA-568-C.2 Category 5e specifications with the upper frequency extended to 250 MHz and appropriate adjustments for length when
applicable as specified in ISO/IEC TR 11801-9904 and TIA TSB-5021."

Cl **126** *SC* **126.7.2** *P* **164** *L* **27** # i-90

Moffitt, Bryan CommScope

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

What are the appropriate adjustments for length? I find none.

SuggestedRemedy

delete this

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See comment#89.
Editor's note added after comment resolution was complete: text was deleted by comment i-89:
IEEE P802.3bz D2.0 2.5G/5GBASE-T Initial Working Group ballot comment: # 380 was not fully implemented. It was to have deleted use of equivalent.

Delete: The link segment transmission parameters for 2.5GBASE-T are equivalent to ISO/IEC 11801 Class D and ANSI/TIA-568-C.2 Category 5e. The link segment transmission parameters for 5GBASE-T are equivalent to ISO/IEC 11801 Class D and ANSI/TIA-568-C.2 Category 5e specifications with the upper frequency extended to 250 MHz and appropriate adjustments for length when
applicable as specified in ISO/IEC TR 11801-9904 and TIA TSB-5021."

Cl **126** *SC* **126.7.2.4** *P* **165** *L* **24** # i-91

Moffitt, Bryan CommScope

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

should be plural

SuggestedRemedy

change "is specified" to "are specified"

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.7.2.4.1** *P* **165** *L* **34** # i-92

Moffitt, Bryan CommScope

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

The spec only covers the higher frequencies

SuggestedRemedy

Should say: Additionally, the NEXT loss between any two 5GBASE-T duplex channels of a link segment shall meet the values determined using Equation (126-14).

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See comment#111
Editor's note added after comment resolution was complete:

Implemented by comment i-111:

Implement commenter's proposed remedy, (Change "The NEXT loss" to "Additionally, the NEXT loss") AND,
Change previous sentence to be parallel to 126.7.2.4.2 and bring the low frequency spec to 5GBASE-T as well:
Change P165 L34 from:
"The NEXT loss between any two 2.5GBASE-T duplex channels..." to read:
"The NEXT loss between any two duplex channels..."

Cl **126** *SC* **126.7.2.4.4** *P* **167** *L* **51** # i-93

Moffitt, Bryan CommScope

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

Why is this and equation 126-21 presented? It seems only to add confusion since it is the only "length adjustment" as identified in 126.7.2, but is not used. The variable name is also confusing since it is the same as the previous equation but actually only applies to the cable portion. Further confusing since /100 is swapped out for 40 dB.

SuggestedRemedy

delete this

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Delete Equation 126-21 and the text which refers to it on P167 L51 - P168 L7:
Beginning: "The numerator of the first term..."
and Ending: "f is the frequency in MHz."

Cl **126** *SC* **126.7.3.1** *P* **170** *L* **1** # i-94
Moffitt, Bryan CommScope

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

Seems like the table is positioned in the middle of an unrelated paragraph.

SuggestedRemedy

move up to p169 l52

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Editor to beat on frame and reposition Table 126-20 so that it does not break up text.

Cl **126** *SC* **126.7.3.1** *P* **170** *L* **28** # i-95
Moffitt, Bryan CommScope

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

this sentence is runon

SuggestedRemedy

change to:TemplatePSDdisturbedi, is provided by Table 126-21, according to which application is running on the disturbed link segment. This must be calculated over the frequency range selected in Step 1.

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.7.3.1** *P* **171** *L* **9** # i-96
Moffitt, Bryan CommScope

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

The result is not a function of frequency

SuggestedRemedy

remove frequency dependence

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Delete "(f)" in "TotalRXTPdBmdisturbed(f) ="

Cl **126** *SC* **126.7.3.1** *P* **171** *L* **28** # i-97
Moffitt, Bryan CommScope

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

This is not a function of frequency , and line 28 is not needed

SuggestedRemedy

delete: where
fmin and fmax are given in Table 126-20.

Response *Response Status* **C**

ACCEPT.
Duplicate of comment i-75.

Cl **126** *SC* **126.7.3.1** *P* **171** *L* **40** # i-98
Moffitt, Bryan CommScope

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

(see Step 8 for further details of calculations for all possible permutations) is incorrect and not needed

SuggestedRemedy

delete this

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change "Step 8" to "Step 9"
and delete "(see Step 9 for more detail)" on P171 L38.

Cl **126** *SC* **126.7.3.1** *P* **172** *L* **49** # i-99
Moffitt, Bryan CommScope

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

The result is not a function of frequncy

SuggestedRemedy

remove frequency dependence

Response *Response Status* **C**

ACCEPT.
Delete "(f)" in "TotalRXTPdBmdisturbing(f) ="

Cl **126** *SC* **126.7.3.1** *P* **173** *L* **16** # i-100
Moffitt, Bryan CommScope

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

This is not a function of frequncy

SuggestedRemedy

delete: where
fmin and fmax are given in Table 126-20.

Response *Response Status* **C**

ACCEPT.
Duplicate of comment i-75

Cl **126** *SC* **126.7.3.1** *P* **173** *L* **50** # i-101
Moffitt, Bryan CommScope

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

wrong reference

SuggestedRemedy

should say: together at each frequency point using Equation (126-35).

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.7.3.1** *P* **174** *L* **2** # i-102
Moffitt, Bryan CommScope

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

broken indexing

SuggestedRemedy

change first index variable to m and second index variable to k

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.7.3.1** *P* **174** *L* **7** # i-103
Moffitt, Bryan CommScope

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

repeated from page 173 line 32

SuggestedRemedy

delete

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Delete "M is the number of disturbing link segments"

Cl **126** *SC* **126.7.3.1** *P* **174** *L* **28** # i-104
Moffitt, Bryan CommScope

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

result is not a function of frequency

SuggestedRemedy

remove frequency dependence

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.7.3.1** *P* **174** *L* **32** # i-105
Moffitt, Bryan CommScope

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

scrambled definitions

SuggestedRemedy

fmin and fmax are given in Table 126-20, and Df is the step size between frequency points at each data point in the same frequency units (e.g., both MHz or both Hz).

Response *Response Status* **C**

ACCEPT.

Cl **126** *SC* **126.8.2** *P* **175** *L* **51** # i-106

Moffitt, Bryan CommScope

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

improper introduction and I find no specified MDI test plug

SuggestedRemedy

Change to: when mated with a nominal category 5e balanced cabling connector (plug). 126.8.2 also seems to serve as an introduction to all 4 MDI specifications but goes right into FEXT. It seems like FEXT should be 126.8.2.1, etc.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change from:

126.8.2 MDI Electrical Specifications
The MDI connector (jack) when mated with a specified balanced cabling connector (plug) shall meet the FEXT requirements as specified in Equation (126–38) between all contact pair combinations shown in Table 126–24:

Change to…

126.8.2 MDI Electrical Specifications
“The MDI connector (jack) shall meet the following requirements for FEXT, Return Loss, and Impedance Balance when mated with a nominal balanced cabling connector (plug). The mated connection shall meet transmission performance requirements for category 5e connecting hardware found in ANSI/TIA 568-C.2, section 6.8.

Note: Use of a compliant test plug as defined in ANSI/TIA 568-C.2, annex C, section C.4.10 will help ensure connecting hardware transmission performance for these purposes.”

126.8.2.1 MDI FEXT
“The MDI connector (jack) shall meet the FEXT requirements as specified in Equation (126–38) between all contact pair combinations shown in Table 126–24:”

All subsequent text in this clause is unchanged, and subsequent clauses should be renumbered to accommodate the added MDI FEXT clause. Adjust PICs clause reference for MDI5 to reflect the move of MDI FEXT.

Cl **126** *SC* **126.8.2.1** *P* **176** *L* **12** # i-107

Moffitt, Bryan CommScope

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

This MDI return loss specification is unstable because cables can vary

SuggestedRemedy

Change to: The differential impedance at the MDI for each transmit/receive channel shall be such that any reflection due to differential signals incident upon the MDI from from a test port with 100 U source impedance

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Requirement is correct, as intended, cabling variation should be accounted for.

Cl **126** *SC* **126.8.2.2** *P* **176** *L* **29** # i-108

Moffitt, Bryan CommScope

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

Not clear if a network analyzer will give correct results with the transmitter turned on

SuggestedRemedy

Change to an idle test mode

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Accomodated by comment i-113:
ACCEPT IN PRINCIPLE.
Implement the commenter's proposed resolution adding the note - at the end of 126.8.2.2. (proposed resolution follows:)
Add the following note:
"Note - The measurement may use narrow IF bandwidth settings and averaging to better distinguish between impedance balance and the transmitted test pattern."

Cl **126** *SC* **126.7.2** *P* **164** *L* **1** # i-109

Maguire, Valerie — The Siemon Company

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

The footnote related to signal-to-alien crosstalk noise margin criteria is specific to the length support designation. Information about category 6A/class EA performance is a standalone thought.

SuggestedRemedy

Break footnote a) into two footnotes as follows and place superscript "b" after 100m in two locations in the Table 126-18. a) Supported link segments up to 100 m shall meet the signal-to-alien crosstalk noise margin criteria specified in 126.7.3.1. b) A link segment consisting of up to 100m of Category 6A/Class EA or better will meet the transmission parameters of 126.7 and provide a reliable medium for 2.5GBASE-T without further qualification.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Implement suggested remedy breaking footnote into two pieces.

Place superscript "b" on column header for "Supported link segment distances"

Cl **126** *SC* **126.7.2** *P* **164** *L* **20** # i-110

Maguire, Valerie — The Siemon Company

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

The footnote related to signal-to-alien crosstalk noise margin criteria is specific to the length support designation. Information about category 6A/class EA performance is a standalone thought.

SuggestedRemedy

Break footnote a) into two footnotes as follows and place superscript "b" after 100m in two locations in the Table 126-19. a) Supported link segments up to 100 m shall meet the signal-to-alien crosstalk noise margin criteria specified in 126.7.3.1. b) A link segment consisting of up to 100m of Category 6A/Class EA or better will meet the transmission parameters of 126.7 and provide a reliable medium for 5GBASE-T without further qualification.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Implement suggested remedy breaking footnote into two pieces.

Place superscript "b" on column header for "Supported link segment distances"

Cl **126** *SC* **126.7.2.4.1** *P* **165** *L* **34** # i-111

Mcclellan, Brett — Marvell Semiconducto

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

"Additionally" was dropped in the edit to draft 2.1 making equation 126-14 separate from 126-13. Both equations apply to 5GBASE-T.

SuggestedRemedy

Change "The NEXT loss" to "Additionally, the NEXT loss"

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Implement commenter's proposed remedy, AND,
Change previous sentence to be parallel to 126.7.2.4.2 and bring the low frequency spec to 5GBASE-T as well:
Change P165 L34 from:
"The NEXT loss between any two 2.5GBASE-T duplex channels..." to read:
"The NEXT loss between any two duplex channels..."

Cl **126** *SC* **126.7.3.1** *P* **170** *L* **14** # i-112

Mcclellan, Brett — Marvell Semiconducto

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

100MHz is enough bandwidth for for 2.5G and 5G PBO calculation, but 200MHz should be used for 10GBASE-T.

SuggestedRemedy

Change the note from:
NOTE--While disturbing signals may contain higher frequencies, the received power, which determines the power backoff, is dominated by the power below 100 MHz. Neglecting the higher frequencies has no appreciable effect in computing the 10GBASE-T or 5GBASE-T power backoff."
To:
"NOTE--While disturbing signals may contain higher frequencies, the received power, which determines the power back off, is dominated by the power below 100 MHz, for 2.5GBASE-T and 5GBASE-T, and neglecting the frequencies above 100MHz has no appreciable effect in computing the 2.5GBASE-T or 5GBASE-T power back off. When 10GBASE-T power back off is to be computed, frequencies up to at least 200 MHz should be used."

Response *Response Status* **W**

ACCEPT.

Cl **126** *SC* **126.8.2.2** *P* **177** *L* **4** # i-113

Mcclellan, Brett
Marvell Semiconducto

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

It may not be clear to the reader that the network analyzer will need to be specially configured to isolate the transmitted test pattern from the impedance balance measurement.

SuggestedRemedy

Add the following note:
"Note - The measurement may use narrow IF bandwidth settings and averaging to better distinguish between impedance balance and the transmitted test pattern."

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
Implement the commenter's proposed resolution adding the note - at the end of 126.8.2.2.