Cl **1** *SC* **1.3** *P* **19** *L* **5** # 1

Maguire, Valerie Siemon

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

Missing reference to TIA TSB addressing guidelines for the use of installed cabling to support 2.5GBASE-T and 5GBASE-T.

SuggestedRemedy

Insert into Normative references: TSB-5021-201x, “Guidelines for the use of Installed Cabling to Support 2.5GBASE-T and 5GBASE-T"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.3** *P* **19** *L* **31** # 2

Maguire, Valerie Siemon

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

2.5GBASE-T should operate on cabling with higher than category 5e /class D performance.

SuggestedRemedy

Replace,

"...using four pairs of Category 5e / Class D balanced copper cabling."

with,

"using four pairs of Category 5e / Class D or higher performing balanced copper cabling."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.4** *P* **19** *L* **35** # 3

Maguire, Valerie Siemon

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

5GBASE-T should operate on cabling with higher than category 5e /class D performance.

SuggestedRemedy

Replace,

"...using four pairs of Category 5e / Class D balanced copper cabling."

with,

"using four pairs of Category 5e / Class D or higher performing balanced copper cabling."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **4** *SC* **4.4.2** *P* **21** *L* **17** # 4

Maguire, Valerie Siemon

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

Space missing in table column header.

SuggestedRemedy

Replace,

"2.5 Gb/s, 5 Gb/s, and10 Gb/s"

with,

"".5 Gb/s, 5 Gb/s, and 10 Gb/s"

(Leave strikethrough as shown in table.)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **126** *SC* **126.7.2** *P* **157** *L* **47** # 5

Maguire, Valerie Siemon

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

Insert TIA TSB reference.

SuggestedRemedy

Replace,

"TIA TSB-x- (TBD)"

with,

"TIA TSB-5021"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **126** *SC* **126.7.2** *P* **157** *L* **48** # 6

Maguire, Valerie Siemon

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

There is no assurance that category 6 / class E link segments up to 100 m will meet the alien crosstalk and insertion loss requirements specified in 126.7.3.1.2 and 126.7.3.2.2.

SuggestedRemedy

Add a row for "category 6 /class E" into Table 126-18 with the same link distances and cabling references.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Discuss with comments on alien crosstalk requirements. (comments 17, 21, 76)

Cl **126** *SC* **126.7.2** *P* **158** *L* **9** # 7

Maguire, Valerie Siemon

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

Insert TIA TSB reference.

SuggestedRemedy

Replace,

"TIA TSB-x- (TBD)"

with,

"TIA TSB-5021"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **126** *SC* **126.7.2** *P* **158** *L* **10** # 8

Maguire, Valerie Siemon

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

There is no assurance that category 6 / class E link segments up to 100 m will meet the alien crosstalk and insertion loss requirements specified in 126.7.3.1.2 and 126.7.3.2.2.

SuggestedRemedy

Add a row for "category 6 /class E" into Table 126-19 with the same link distances and cabling references.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Discuss with comments on alien crosstalk requirements. (comments 17, 21, 76)

Cl **1** *SC* **1.4** *P* **20** *L* **36** # 9

Maguire, Valerie Siemon

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

Consider adding a definition for category 8 to suport the reference in clase 113A.3, line 6.

SuggestedRemedy

Copy definition for definition for category 8 from P802.3bq and insert into clause 1.4.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE. Track editorially with BQ

Cl **126** *SC* **126.7** *P* **157** *L* **9** # 10

Maguire, Valerie Siemon

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

Insert TIA TSB reference.

SuggestedRemedy

Replace,

"TIA TSB-XX"

with,

"TIA TSB-5021"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **126** *SC* **126.7.2** *P* **158** *L* **16** # 11

Maguire, Valerie Siemon

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

Insert TIA TSB reference.

SuggestedRemedy

Replace,

"TIA TSB-x(TBD)"

with,

"TIA TSB-5021"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **126** *SC* **126.7.2** *P* **157** *L* **49** # 12

Maguire, Valerie Siemon

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

There appears to be a typo in the footnote to Table 126-18.

SuggestedRemedy

Replace,

"shall meet the alien crosstalk to insertion loss requirements"

with,

"shall meet the alien crosstalk and insertion loss requirements"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
These are the alien crosstalk requirements modified by insertion loss, and is what they are called in the referenced sections. (this same buggered name is in Clause 55)

Cl **126** *SC* **126.7.2** *P* **158** *L* **11** # 13

Maguire, Valerie Siemon

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

There appears to be a typo in the footnote to Table 126-19.

SuggestedRemedy

Replace,

"shall meet the alien crosstalk to insertion loss requirements"

with,

"shall meet the alien crosstalk and insertion loss requirements"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
These are the alien crosstalk requirements modified by insertion loss, and is what they are called in the referenced sections. (this same buggered name is in Clause 55)

Cl **126** *SC* **8.2** *P* **175** *L* **3** # 14

Schicketanz, Dieter Consultant

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

MDI frequecy range too high it shows cat6a

SuggestedRemedy

change in line 3,line 18,line 33

500 to 250 MHz

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **126** *SC* **7.2.3** *P* **159** *L* **5** # 15

Schicketanz, Dieter Consultant

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

in Eq: 126-12 format of log10 different to other places

SuggestedRemedy

use the same format at all places

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **126** *SC* **7.2** *P* **158** *L* **3** # 16

Schicketanz, Dieter Consultant

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

Table 126-19
The frequency extension has to be related clearly to the table and not hidden in the following text

SuggestedRemedy

add note b) to the table with the text of line 13 to 16

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
It is expected that the referenced TSB and TR in the table will address the frequency extension

Cl **126** *SC* **7.3.3** *P* **169** *L* **11** # 17

Schicketanz, Dieter Consultant

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

This alien crosstalk margin computation was developed for 10G.
In the installed base for 2.5 and 5 G it is by far an overkill and would need a complete measurement of Alien noise, not practical for installed base.

SuggestedRemedy

Delete this requirement for 2.5 and 5 G.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The text that is there is a strawman for a test for 2.5G/5GBASE-T. This is indicated by the editor's note. Commenters will be encouraged to refine the test for use with 2.5/5G, where it may be more of use than it is for 10G due to the fact that alien crosstalk is uncharacterized in the installed base of Cat5e and Cat6.

Cl **127** *SC* **7.2** *P* **157** *L* **41** # 18

Schicketanz, Dieter Consultant

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

Table 126-18
are we shure that for 2.5 G only Alien noise needs to be added and not some frequency enhancement ?

SuggestedRemedy

Add a TBD to a note b) mentioning this

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Existing references to the TIA TSB and ISO TR can address any frequency enhancement as necessary.
Add editor's note requesting PHY designers to consider whether further bandwidth is needed on the specification for the 2.5GBASE-T link segment.

Cl **126** *SC* **7.2.1** *P* **158** *L* **25** # 19

Schicketanz, Dieter Consultant

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

Eq:126-10 shows the values of class ISO class E not D as supposed

SuggestedRemedy

Replace by class D equation

1.05(19108 ... 0.0222 .... 0.2..) +4x0.04 ...

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement equations on page 4 of zimmerman_3bz_1_0515.pdf per Motion 8 from the May 2015 interim

Cl **126** *SC* **126.5.3** *P* **146** *L* **26** # 20

Zimmerman, George CME Consulting, Inc.

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

Comment i-54 against the Revision project D3.0 has changed all instances in 802.3 of "AC coupling" to "AC-coupling"
Also applies to PICS item PME18

SuggestedRemedy

Change "AC coupling" to "AC-coupling" on Page 153, line 27 and also on Page 189, line 37

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **126** *SC* **126.7.3.1.1** *P* **163** *L* **52** # 21

Zimmerman, George CME Consulting, Inc.

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

Alien crosstalk limit lines are generally impractical and are redundant to more robust methods based on Salz SNR such as the ACMC in 126.7.3.3 - see presentations by Commscope & Aquantia. If they are a good model, they can at best come close to the Salz SNR with various adjustments. At worst, a link segment can fail a limit line at point frequencies by arbitrary amounts and still correctly qualify by ACMC or other Salz-based methods for PHY operation. These requirements are redundant, unneeded and confuse the issue for 2.5/5G qualified links

SuggestedRemedy

Delete requirement for PSANEXT and PSAFEXT to meet limit lines, while leaving explanatory text.
Delete P163 L52 through P166 L16 (PSANEXT requirement, and subclause 126.7.3.1.2 adjusting limit line for IL)

Delete P167 L17 through P167 L10 (PSAACRF requirement, and subclause 126.7.3.2.2 adjusting limit line for IL)

Add editor's note at P169 L12, at start of 126.7.3.3 Alien Crosstalk Margin Computation
Editor's note (to be removed prior to Working Group Ballot) - Link segment alien crosstalk requirements are to be determined by an SNR-based method, such as variations on the Alien Crosstalk Margin computation from Clause 55, the text of which is repeated below.Commenters are encouraged to develop text for an SNR-based metric, and build consensus during the next review cycle.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Discuss with presentations from sederat & mei showing Salz analysis.

Cl **126** *SC* **126.6.1.1** *P* **152** *L* **5** # 22

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

'Clause 45' should be a cross-reference

BQ CARRY OVER 15

SuggestedRemedy

Make 'Clause 45' a cross-reference

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **126** *SC* **126.12** *P* **167** *L* **1** # 23

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

The PICS proforma should start at the top of a new page. (Ed note - in bz is appears to, but isn't forced to this)
The text in 126.12 and the tables in 126.12.1.1 and 126.12.1.2 should be based on those in the 802.3 template

BQ CARRY OVER 17

SuggestedRemedy

In the paragraph designer, set the heading for 113.12 to Start: Top of Page as per the 802.3 template.
Change text in 113.12 and the tables in 113.12.1.1 and 113.12.1.2 to be based on those in the 802.3 template.

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **126** *SC* **126.3.6.4** *P* **110** *L* **37** # 24

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

In figure 113-17 there is an extra "+" on the exit for TX_E state going to target C

BQ CARRY OVER 1

SuggestedRemedy

Remove the extranenous +

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **126** *SC* **126.3.2.2.16** *P* **91** *L* **35** # 25

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

Extraneous period after colon,

BQ CARRY OVER 35 (modified)

SuggestedRemedy

Delete extraneous period

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **126** *SC* **126,1,2** *P* **66** *L* **3** # 26

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

Figure 126-1 references CSMA/CD, align with IEEE Std. 802.3bx D3p1, Replace "LAN CSMA/CD" with "ETHERNET" in upper part of figure, and in figure title on line 29.

Also: figure 125-1 (P62 L3), 126.1.2, p65 L42,

BQ CARRY OVER 85 (extended to include other references)

SuggestedRemedy

Replace "LAN CSMA/CD LAYERS" with "ETHERNET LAYERS" in Figure 126-1 (line 4)
Replace "CSMA/CD LAN" with "Ethernet" in figure title on line 30
Replace "LAN CSMA/CD LAYERS" with "ETHERNET LAYERS" in Figure 125-1 (P62 L3)
Replace "CSMA/CD LAN" with "Ethernet" in text of 126.1.2 (P65 L42)

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **126** *SC* **126.6.1.2** *P* **153** *L* **45** # 27

Zimmerman, George CME Consulting, Inc.

Comment Type **T** *Comment Status* **X** *BQ*

Table 126-16: short reach mode bit in autoneg page needs extension to 40G, and doesn't currently agree with clause 45 register.

(this comment is aligning to bq and the base text in 802.3bx d3p1, not making a recommendation that 802.3bz phys have a short reach mode)

BQ CARRY OVER 88

SuggestedRemedy

Change "10GBASE-T PHY short reach mode" to "PHY short reach mode"

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **126** *SC* **126.1.3** *P* **67** *L* **17** # 28

Zimmerman, George CME Consulting, Inc.

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

Accept and include fast retrain functionality into draft 1.0

SuggestedRemedy

delete editor's notes saying fast retrain is to be included.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See comment 84 for a more complete remedy

Cl **126** *SC* **126.1.3** *P* **67** *L* **18** # 29

Zimmerman, George CME Consulting, Inc.

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

Delete non-loop timed option

SuggestedRemedy

Accept strikeouts deleting non-loop-timed option throughout the draft as indicated.
Delete editor's note to accept it

Proposed Response *Response Status* **W**

PROPOSED ACCEPT. See comment 85 for additional related changes.

Cl **126** *SC* **126.1.3** *P* **67** *L* **25** # 30

Zimmerman, George CME Consulting, Inc.

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

Periodic training sequence is unnecessary and doesn't have a bit allocated to enable it.

SuggestedRemedy

Accept strikeouts to delete periodic reset of training sequesnce.
Delete editor's note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See comment 86 for a more complete remedy

Cl **126** *SC* **126.3.5.1** *P* **146** *L* **34** # 31

Zimmerman, George CME Consulting, Inc.

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

Accept proposal for modified droop test per shirani_3bq_01_0615.pdf slide 11 for proposal to modify:(7.5+5/S) %, measured with respect to an initial value at 10 ns after the zero crossing and a final value at (10+160/S) ns after the zero crossing. (note, that in shirani, his "S" is = S/2 in this draft.

SuggestedRemedy

Change lines 40 & 41 per editor's note, delete editor's note.
Delete editor's note regarding droop at page 67 line 28

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Discuss with shirani presentation from ad hoc

Cl **126** *SC* **126.5.3.2** *P* **147** *L* **4** # 32

Zimmerman, George CME Consulting, Inc.

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

Implement editor's note to recover implementation margin for PHYs, Equation 126-6 is proposed to be unscaled: SFDR >= 2.5 + min { 52, 58-20log10(f/25) }

SuggestedRemedy

Change equation 126-6 per comment
Delete editor's note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Discuss with shirani presentation from ad hoc

Cl **126** *SC* **126.3.6.2.2** *P* **102** *L* **48** # 33

Zimmerman, George CME Consulting, Inc.

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

Descriptive text about lfer_timer is unnecessary, text which defines the timer on P104 L48, which says it is 125xS usec in duration.

SuggestedRemedy

Delete "(nominally 125xS us for 2.5GBASE-T and 5GBASE-T, indicating a bit error ratio > 4x10^-4)" on P 102 L 48.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **126** *SC* **126.5.4.4** *P* **151** *L* **31** # 34

Zimmerman, George CME Consulting, Inc.

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

extraneous "bb" at end of paragraph

SuggestedRemedy

Delete "bb"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **126** *SC* **126.6.1.2** *P* **153** *L* **45** # 35

Zimmerman, George CME Consulting, Inc.

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

Table 126-16, U18 - "10GBASE-T PHY Short Reach mode" should be "10G/40GBASE-T PHY Short Reach mode" if 802.3bq comment is accepted

SuggestedRemedy

Align name of U18 with 802.3bq D2p2 (resolution of D2p1 comments)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Align with BQ comment resolution

Cl **126** *SC* **126.1** *P* **65** *L* **10** # 36

Zimmerman, George CME Consulting, Inc.

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

Statement "The 2.5GBASE-T PCS, PMA, and baseband medium specifications are intended for users who want 2.5Gb/s performance over balanced twisted-pair structured cabling systems." needs to be added for 5GBASE-T as well

SuggestedRemedy

Insert "The 5GBASE-T PCS, PMA, and baseband medium specifications are intended for users who want 5Gb/s performance over balanced twisted-pair structured cabling systems." after prior sentence about 2.5GBASE-T.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
(duplicate of comment 97)

Cl **126** *SC* **126.5.4.3** *P* **150** *L* **23** # 37

Zimmerman, George CME Consulting, Inc.

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

Explicit references to shield currents are errorneous carry over from bq.
References to currents is OK, but they may be common-mode or shield currents.

SuggestedRemedy

L23: Delete "in the shield" so that line 23 reads: "When the cabling system is subjected to electromagnetic fields, currents are generated which may be converted to interference."

L33: Delete "shield" so that line 33 reads: "electromagnetic field and corresponding current"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Align with resolution of BQ comment 111 proposing moving much of this section to the annex.

Cl **126** *SC* **126.1** *P* **65** *L* **5** # 38

Zimmerman, George CME Consulting, Inc.

Comment Type **TR** *Comment Status* **X** *BQ*

Subclause 126.1 does not define all of the mandatory and optional sublayers required for a complete physical layer as is done for all 10GBASE-R, 40GBASE-R, and 100GBASE-R PHYs. An example is Table 84-1 for 40GBASE-KR4. Such a table is helpful to identify the related layers and interfaces that are relevant to 2.5GBASE-T or 5GBASE-T but not defined in the Clause 126 such as the XGMII (46), RS (46), XAUI (47, optional), and 10GBASE-X PCS (48, optional, but req'd for XAUI).
BQ CARRY OVER 9

SuggestedRemedy

Add a table "Physical Layer clauses associated with the 2.5/5GBASE-T PCS/PMA" list the "associated clauses" and indicate "optional" or "mandatory" for each.

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **126** *SC* **126.5.4.3** *P* **150** *L* **23** # 39

Zimmerman, George CME Consulting, Inc.

Comment Type **T** *Comment Status* **X** *BQ*

Splitting some technical detail between this clause and the Annex creates confusion, and new technical information is available suggesting a change in source control. Change the paragraph to move all technical detail to the Annex.

BQ CARRY OVER 111

SuggestedRemedy

replace with:
An 80 MHz to 2000 MHz test can be made using the cable clamp described in Annex 113A, 30 meter plug-terminated cabling that meets the requirements of 113.7, suitable broadband ferrites, and a common ground reference plane for this test equipment and the equipment under test. A controlled sine wave that is stepped across the entire frequency range is used to generate the external electromagnetic field and corresponding shield current.

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **30** *SC* **30.5.1.1.20** *P* **27** *L* **20** # 40

Zimmerman, George CME Consulting, Inc.

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

Paragraph missing header format for 30.5.1.1.21 "aSNROpMarginChnlC" - inadvertently in editing instruction format. Causes misnumbering of subsequent paragraph 30.5.1.1.21 (should be 22)

SuggestedRemedy

Change aSNROpMarginChnlC to 5 level header format.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.5.1.1.22** *P* **27** *L* **48** # 41

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

"see 945.2.1.69" - not sure we have 945 Clauses :)

BQ CARRY OVER 45

SuggestedRemedy

Remove "9"

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **30** *SC* **30.5.1.1.24** *P* **28** *L* **7** # 42

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

"see 45.2.1.79.2 and 55.4.5.1 113.4.5.4, and 126.4.5.4" - missing serial comma, unnecesary "and"

BQ CARRY OVER 46

SuggestedRemedy

Change to "see 45.2.1.79.2, 55.4.5.1, 113.4.5.4, and 126.4.5.4" with proper editorial markup
Similar change in 30.5.1.1.25

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **45** *SC* **45.2.3.14** *P* **44** *L* **27** # 43

Zimmerman, George CME Consulting, Inc.

Comment Type **ER** *Comment Status* **X** *BQ*

Inconsistent changes: in 45.2.3.14, the text in line 14 reads "A PCS device that does not implement BASE-R, 2.5GBASE-T, 5GBASE-T, 10GBASE-T, and 40GBASE-T shall return a zero for all bits in the BASE-R and MultiGBASE-T PCS status 2 register." but a similar text in 45.2.3.13 reads "A PCS device that does not implement BASE-R, 2.5GBASE-T, 5GBASE-T, 10GBASE-T, or 40GBASE-T shall return a zero for all bits in the BASE-R and MultiGBASE-T PCS status 1 register"
Note that "and" in the first case was carried over and placed in front of "40GBASE-T and in the second case it was converted into "or" placed in front of "40GBASE-T"

BQ CARRY OVER 54

SuggestedRemedy

I belive the change done in 45.2.3.14 is correct (a PCS device not implementing any of the PHYs, hence "and") and 45.2.3.13 needs to be corrected (change "or" to "and")

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **45** *SC* **45.2.7.11** *P* **48** *L* **12** # 44

Zimmerman, George CME Consulting, Inc.

Comment Type **ER** *Comment Status* **X** *BQ*

MIssing editorial markup in Table 45–208. Rows with bits 7.33.8 and 7.33.2 are newly added.

BQ CARRY OVER 61

SuggestedRemedy

Underline the content in rows with bits 7.33.6 through 7.33.3

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **45** *SC* **45.2.7.10** *P* **47** *L* **12** # 45

Zimmerman, George CME Consulting, Inc.

Comment Type **ER** *Comment Status* **X** *BQ*

Given that this project is adding 2.5/5GBASE-T, I would assume that row with bits 7.32.8, 7.32.7, 7.32.6, and 7.32.5 should be shown in underline - these are new bits, taken out from reserved space

BQ CARRY OVER 55

SuggestedRemedy

per comment

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **00** *SC* **0** *P* **20** *L* **20** # 46

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

Editing instructions should not re-number clauses or definitions when inserted as an "a" (or other letter) heading number
"Insert definition and re-number remaining definitions" (P 20 L 29)
"Insert new clause after 45.2.1.12.15 and re-number remaining clauses (P 35 L 14) and others

BQ CARRY OVER 75

SuggestedRemedy

Editor to search document and delete "an re-number remaining..." throughout document in Editing instructions.

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **1** *SC* **1.4.72b** *P* **20** *L* **23** # 47

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

In the definition for MultiGBASE-T:
"1000Mbps" should be "1000 Mb/s"
"Clause 55" should be "IEEE Std 802.3, Clause 55" and "Clause 55 should be a crossreference.
"Clause 113" should be "IEEE Std 802.3, Clause 113" and "Clause 113 should be a crossreference.
"Clause 126" should be "IEEE Std 802.3, Clause 126" and "Clause 126 should be a crossreference.

BQ CARRY OVER 36

SuggestedRemedy

Change: "1000Mbps" to "1000 Mb/s"
Change: "Clause 55" to "IEEE Std 802.3, Clause 55" and make "Clause 55" a crossreference.
Change: "Clause 113" to "IEEE Std 802.3, Clause 113" and make "Clause 113" a crossreference.
Change: "Clause 126" to "IEEE Std 802.3, Clause 126" and make "Clause 126" a crossreference.

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **1** *SC* **1.5** *P* **20** *L* **45** # 48

Zimmerman, George CME Consulting, Inc.

Comment Type **ER** *Comment Status* **X** *BQ*

Editing instruction references definitions, should be abbreviations in Clause 1.5

BQ CARRY OVER 79

SuggestedRemedy

Change "Insert the following new definitions into the definitions list, in alphanumeric order:" to "Insert the following new abbreviations into the abbreviations list, in alphanumeric order:"

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **1** *SC* **1.4.72b** *P* **20** *L* **23** # 49

Zimmerman, George — CME Consulting, Inc.

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

1.4.72b should be 1.4.278a in 802.3bq D2.1

SuggestedRemedy

Make numbering consistent with alphanumeric order in 802.3bx d3p1 numbering and renumber 72c, 72d to be 72b and 72c

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.4.72b** *P* **20** *L* **23** # 50

Zimmerman, George — CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

The MultiGBASE-T PHYs do not have PMD sublayers

BQ CARRY OVER 77

SuggestedRemedy

Change "Ethernet PCS/PMA/PMDs" to "Ethernet PHYs"
Alternatively, "Ethernet PCS/PMAs"

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **113A** *SC* **113A.3** *P* **198** *L* **5** # 51

Zimmerman, George — CME Consulting, Inc.

Comment Type **T** *Comment Status* **X** *BQ*

Annex 113A describes test configurations and methods - it should be generic so it can be used with multiple PHYs. Examples of the references for 40GBASE-T should be given.
BQ CARRY OVER 94

SuggestedRemedy

P198 L5: Change "uses cabling that meets the requirements of Clause 113.7." to "uses cabling that meets the requirements of the link segment for the PHY under test, e.g., Clause 113.7 for 40GBASE-T."
In 113A.4:
P199 L25: Change "An up to 30-meters of cabling that meets the specification of Clause 113.7 is connected between two 40GBASE-T PHYs and inserted into the cable clamp. The cable should be terminated on each end with an MDI connector plug specified in Clause 113.8.1." to "An up to the maximum specified length of cabling that meets the link segment specification for the PHY under test, e.g., Clause 113.7 for 40GBASE-T, is connected between two such PHYs and inserted into the cable clamp. The cable should be terminated on each end with an MDI connector plug specified for the MDI of the PHY under test, e.g., Clause 113.8.1 for 40GBASE-T."
P196 L30 - replace "40GBASE-T" with "PHY"

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **113A** *SC* **113A.1** *P* **197** *L* **47** # 52

Zimmerman, George — CME Consulting, Inc.

Comment Type **T** *Comment Status* **X** *BQ*

Clamp data needs updating
BQ CARRY OVER 112

SuggestedRemedy

The electrical parameters of the clamp measured between the source connections and without installed cabling are as follows:
a) Insertion loss: < 3 dB below 1000 MHz and < 25 dB below 2000MHz
b) Return loss: > 3 dB below 1000 MHz and > 1 dB below 2000 MHz

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **113A** *SC* **113A** *P* **195** *L* **18** # 53

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

There are now several different versions of cable clamp and the details shown only apply to one of them.

BQ CARRY OVER 110

SuggestedRemedy

change line to:
This annex describes an example of a cable clamp and a representative methodology that should be used in the rejection of

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **125** *SC* **125.1.2** *P* **61** *L* **31** # 54

Zimmerman, George CME Consulting, Inc.

Comment Type **T** *Comment Status* **X** *BQ*

Comment #196 against D2.0 was ACCEPT but has not been implemented correctly.
As explained in the comment:
"The point of the list in 80.1.3 is to define the locations where the data-path widths cannot be changed by the implementation. Each element in the existing list states what the width at that location is."
The suggested remedy was:
Change to: "k) The MDI as specified in Clause 113 for 40GBASE-T uses a 4 lane data path."
but the "uses a 4 lane data path." part (which is the point of having the item at all) is missing from the draft.

(this effects BZ draft in 125.1.2 in item c)

BQ CARRY OVER 31

SuggestedRemedy

Add "uses a 4 lane data path" to the end of item c

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **125** *SC* **125.1.2** *P* **62** *L* **2** # 55

Zimmerman, George CME Consulting, Inc.

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

Figure 126-1 CSMA CD has been taken out of 802.3 and replaced with Ethernet.
Same issue in Figure 126-1 and figure and title of figure 126-1 need to be updated.

SuggestedRemedy

Replace "LAN CSMA/CD LAYERS" with "ETHERNET LAYERS" in Figures 125-1 (p.62) and 126-1 (P66 L2).
Change "IEEE 802.3 CSMA/CD LAN" to "IEEE 802.3 ETHERNET" in title to Figure 126-1(P66 L29)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.5.3.7** *P* **54** *L* **28** # 56

Zimmerman, George CME Consulting, Inc.

Comment Type **TR** *Comment Status* **X** *BQ*

Change to PICS RM15 and RM16 incorrectly includes change to 2.5/5GBASE-T as an exception when operating at 10G - this can never happen.

BQ CARRY OVER 97

SuggestedRemedy

Delete proposed PICS change to RM15 and RM 16

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **45** *SC* **45.5.3.9** *P* **55** *L* **22** # 57

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

Font size inconsistency in Feature column for AM51

BQ CARRY OVER 64

SuggestedRemedy

Please align font format and size

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **45** *SC* **45.2.7.11** *P* **48** *L* **11** # 58

Zimmerman, George CME Consulting, Inc.

Comment Type **ER** *Comment Status* **X** *BQ*

Multiple tables, including Table 45–208 and Table 45–207, are not aligned with P802.3bx, D3.1. For example, Reserved bit 7.33.8:2 has description changed from "Value always 0, writes ignored" to "Value always 0"

BQ CARRY OVER 62

SuggestedRemedy

Align tables with Clause 45 in 802.3bx D3.1

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **45** *SC* **45.2.7.10.4** *P* **47** *L* **22** # 59

Zimmerman, George CME Consulting, Inc.

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

Editing instructions for inserted clauses should not say "and re-number remaining clauses."

However, in this case, what is happening is a comment is needed on 802.3bq to renumber clauses 45.2.7.10.4b and 4c to 45.2.7.10.4f and 4g to make room for the bz inserted clauses

SuggestedRemedy

Change editing instruction to:
"Insert four new clauses after 45.2.7.10.4c (se IEEE P802.3bq draft)"
Add editor's note:
Editor's Note (to be removed prior to publication) - IEEE P802.3bq inserted clauses are interrupted by these new clauses, and will need a comment to renumber.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.7.11** *P* **48** *L* **11** # 60

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

In Table 45-208, "Value always 0, writes ignored" has been changed to "Value always 0" in the base standard.
The reserved bits in this row are "7.33.8:2" in the base standard, so there should be an "8" in strikeout font.

BQ CARRY OVER 27

SuggestedRemedy

Change "Value always 0, writes ignored" to "Value always 0"
Show "8:2" in strikeout and "7" underlined

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **45** *SC* **45.2.1.64.1** *P* **36** *L* **46** # 61

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

Space missing in "negotiation process.The 10GBASE-T"

BQ CARRY OVER 49

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **45** *SC* **45.2.3.7** *P* **41** *L* **18** # 62

Zimmerman, George CME Consulting, Inc.

Comment Type **ER** *Comment Status* **X** *BQ*

The row with definition of register 3.8.6 should be shown in underline - it is new content

BQ CARRY OVER 51

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **45** *SC* **45.2.3.13** *P* **42** *L* **52** # 63

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

the second "the" not needed in "the BASE-R, 10GBASE-T, or the 40GBASE-T "

Other changes in 45.2.3.14 appear to have been fixed in bz:
45.2.3.14, page 41, line 17
45.2.3.14.1, page 41, line 41
45.2.3.14.1, page 41, line 43
45.2.3.14.2, page 42, line 5
45.2.3.14.2, page 42, line 7
several PICS in 45.5.3.7

BQ CARRY OVER 52

SuggestedRemedy

SuggestedRemedy
Change to "the BASE-R, 10GBASE-T, or 40GBASE-T "
Editor to confirm other changes referenced.

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **45** *SC* **45.2.3.13.4** *P* **43** *L* **54** # 64

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

After the changes, the new sentence does not read correctly: "This bit is a direct reflection of the state of the hi_lfer variable in the 2.5GBASE-T, 5GBASE-T, 10GBASE-T and 40GBASE-T 64B/65B state diagrams and is defined in 126.3.6.2.2, 55.3.6.1 and 113.3.6.2.2."

BQ CARRY OVER 53

SuggestedRemedy

Suggest to change to (changes shown in >><<): "This bit is a direct reflection of the state of the hi_lfer variable in the 2.5GBASE-T, 5GBASE-T, 10GBASE-T and 40GBASE-T 64B/65B state diagrams, defined in 55.3.6.1 and 113.3.6.2.2 >>for 2.5/5GBASE-T, 10GBASE-T and 40GBASE-T, respectively<<".

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **45** *SC* **45.2.7.10** *P* **47** *L* **21** # 65

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

Footnote to table 45-207 somehow got moved to the next page.
(note - this is in bq, not shown in bz, but the same defect probably exists in the bz source)

BQ CARRY OVER 57

SuggestedRemedy

Beat on Frame, make sure footnote is attached to table and now allowed to move to next page on its own.

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **45** *SC* **45.5.3.7** *P* **54** *L* **50** # 66

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

RM40: usage of MultiGBASE-T is awkward, making it look like "MultiGBASE-T" is a single PHY. Meaning is "does not support ANY MultiGBASE-T"

BQ CARRY OVER 95

SuggestedRemedy

insert "any" before last "MultiGBASE-T" to read:
"Reads from BASE-R and MultiGBASE-T PCS status 2 register return zero for PCS that does not support 10/40/100GBASE-R or any MultiGBASE-T"

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **45** *SC* **45.2.1** *P* **32** *L* **14** # 67

Zimmerman, George CME Consulting, Inc.

Comment Type **T** *Comment Status* **X** *BQ*

The register names for registers 1.133 through 1.144 are shown in Table 45-3 as changing from starting "10GBASE-T" to "MultiGBASE-T".
However, the register names in the defining subclauses 45.2.1.66 through 45.2.1.77 do not start with "10GBASE-T", and are not modified in the current draft.
To fix this issue, either:
a) the register names in Table 45-3 should remain as shown and the register names in 45.2.1.66 through 45.2.1.77 changed to start "MultiGBASE-T"
or
b) the register names in Table 45-3 should be shown as having "10GBASE-T" in strikethrough font to make them the same as in the defining subclauses.
Option a) has the merit of making the PHYs that use these registers clear, which it would otherwise not be.

BQ CARRY OVER 19

SuggestedRemedy

either:
a) leave the register names in Table 45-3 as they are and the change the register names in 45.2.1.66 through 45.2.1.77 to start "MultiGBASE-T" (preferred)
or
b) change the register names in Table 45-3 to start with "10GBASE-T" in strikethrough font to make them the same as in the defining subclauses.

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **45** *SC* **45.2.1** *P* **32** *L* **14** # 68

Zimmerman, George CME Consulting, Inc.

Comment Type **ER** *Comment Status* **X** *BQ*

Table 45-3 register names for Register 1.133 through 1.144 (SNR operating margin, minimum margin, and RX Signal power registers) do not agree with names of registers in referenced subclauses (subclauses 45.2.1.66 through 45.2.1.77 do not include "10G" and hence don't need the change to MultiG).
This defect exists in the base standard and the revision draft.

BQ CARRY OVER 95

SuggestedRemedy

Change names for Registers 1.133 through 1.144 in Table 45-3 to delete "10GBASE-T" from the name, as is in the base standard for the subclauses 45.2.1.66 though 45.2.1.77. Do not add MultiGBASE-T to these names in 802.3bz.

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **45** *SC* **45.2.1.6** *P* **33** *L* **50** # 69

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

Table 45-7 incorrectly lists 2.5GBASE-T and 5GBASE-T PMA/PMDs. Should be simply PMA as 2.5 and 5GBASE-T do not have PMDs (10GBASE-T is listed in teh same table as just PMA).

BQ CARRY OVER 101 (with modification)

SuggestedRemedy

Delete /PMD from the line 50 and 51 entries to read "5GBASE-T PMA", and "2.5GBASE-T PMA" respectively

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **45** *SC* **45.2.1.14e.1** *P* **35** *L* **39** # 70

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

45.2.1.14e.1 and 45.2.1.14e.2 call out "5GBASE-T PMA/PMD" and "2.5GBASE-T PMA/PMD" respectively. Should be just PMA.

BQ CARRY OVER 102

SuggestedRemedy

Change lines 39 & 41-42 to read "5GBASE-T PMA"
Change lines 46 & 47-48 to read "2.5GBASE-T PMA"

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **45** *SC* **45** *P* **31** *L* **7** # 71

Zimmerman, George CME Consulting, Inc.

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

TODO Editor's note was supposed to be deleted prior to task force review. task has been done.

SuggestedRemedy

Delete TODO Editor's note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **78** *SC* **78.5** *P* **59** *L* **51** # 72

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

Inconsistenct changes: "10GBASE-T PHY and 40GBASE-T PHY" - in Clause 45, similar text was modified to read "10GBASE-T and 40GBASE-T PHY"

BQ CARRY OVER 66

SuggestedRemedy

Change "10GBASE-T PHY and 40GBASE-T PHY" to "10GBASE-T and 40GBASE-T PHY" on page 59, lines 51 and 53

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **99** *SC* *P* **3** *L* **36** # 73

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

As the P802.3bq draft is not currently approved it is inappropriate to have text: "At the date of IEEE Std 802.3bq-2015 publication,..."
Same issue on page 4, line 25

BQ CARRY OVER 33

SuggestedRemedy

Change "IEEE Std 802.3bq-2015" to "IEEE Std 802.3bq-201x" on page 3, line 36 and change "IEEE Std 802.3bqTM-2015" to "IEEE Std 802.3bqTM-201x" on page 4, line 25

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **99** *SC* *P* **3** *L* **20** # 74

Zimmerman, George CME Consulting, Inc.

Comment Type **E** *Comment Status* **X** *BQ*

The introductory text provided by the IEEE 802.3 WG Chair has been changed.
The latest version can be found in the 802.3 FrameMaker template or in Section 1 of the Revision project 802.3bx D3.1

BQ CARRY OVER 32

SuggestedRemedy

Update the introduction text (paragraphs 2, 3, and 4 on page 3 of the draft) to the latest version.

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **A** *SC* **A** *P* **189** *L* **1** # 75

Zimmerman, George CME Consulting, Inc.

Comment Type **ER** *Comment Status* **X** *BQ*

There are no instructions to edit Annex A

BQ CARRY OVER 6

SuggestedRemedy

Delete Annex A

Proposed Response *Response Status* **W**

per BQ d2p1 resolution

Cl **126** *SC* **7.2** *P* **157** *L* **28** # 76

DiMinico, Christopher MC Communications

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

The link segment specifications are TIA 568 C.2 Cat 5e parameters with TBD for 100MHz < f </= 250MHz. Coupling parameters between link segments
“alien crosstalk” are TBD.

SuggestedRemedy

Refefenced presentation provides Cat 5e parameters with TBD for 100MHz < f </= 250MHz. In addition, proposal will remove many of the "alien crosstalk" TBDs.
See diminico_3bz_0715.pdf

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Discuss with presentation

Cl **126** *SC* **126.3.6.2.5** *P* **107** *L* **7** # 77

McClellan, Brett Marvell

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

change 12 to 4
There is no change from 10GBASE-T.
Should be 4 because there are 4 Q/R cycles in a group.

SuggestedRemedy

change 12 to 4
also change 12 to 4 on line 12

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Note - this number was changed to 6 in 802.3bq, needs a comment to fix (added as a late comment)

Cl **126** *SC* **126.3.6.4** *P* **110** *L* **37** # 78

McClellan, Brett Marvell

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

delete ")+" this was an error introduced in 802.3az
BQ duplicate

SuggestedRemedy

delete ")+"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See comment 24

Cl **126** *SC* **126.12.3** *P* **179** *L* **35** # 79

McClellan, Brett Marvell

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

The line code is PAM16
change DSQ128 to PAM16

SuggestedRemedy

change DSQ128 to PAM16

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Make proposed change
PICS were not updated for this draft 0.1
Editor to update and review all Clause PICS for similar legacy items in preparation for next draft

Cl **78** *SC* **78.2** *P* **59** *L* **40** # 80

McClellan, Brett Marvell

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

Starting with a baseline of 10GBASE-T scaled by baud rate minimizes changes and should promote interoperability. See presentation

SuggestedRemedy

Change table 78-2
Ts min - 11.52 for 2.5G 5.76 for 5G
Ts max - 12.8 for 2.5G 6.4 for 5G
Tq min/max - 158.72 for 2.5G 79.36 for 5G
Tr min/max - 7.68 for 2.5G 3.84 for 5G

Change table 78-4
Tw_sys_tx & Tw_phy Case-1 29.44 for 2.5G 14.72 for 5G
page 94 line 53 change 12.8 to 14.72
page 95 line 8 change 12.8 to 14.72

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Discuss with presentation
Review and align with decision on EEE sleep, quiet and refresh times.
See related comments 82, 87, 89, 90, 92

Cl **78** *SC* **78.2** *P* **59** *L* **47** # 81

McClellan, Brett Marvell

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

I think this note was not intended to be left in the draft.
Remove editor's note OR
in editor's note change 78-5 to 78-4

SuggestedRemedy

Remove editor's note

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Not clear which editor's note is indicated. Neither say 78-5, both are intended in the draft.
Review both editor's notes in committee.

Cl **78** *SC* **78.5** *P* **59** *L* **48** # 82

McClellan, Brett Marvell

Comment Type **T** *Comment Status* **X** *EEE*

Starting with a baseline of 10GBASE-T scaled by baud rate minimizes changes and should promote interoperability. See presentation

SuggestedRemedy

Change table 78-4: Tw_sys_tx & Tw_phy Case-1 29.44 for 2.5G 14.72 for 5G

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Discuss with Comment 80
Change Table 78-2 to be consistent as well Review both editor's notes in committee.

Cl **125** *SC* **125.4** *P* **64** *L* **30** # 83

McClellan, Brett Marvell

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

in Table 125–5—Sublayer delay constraints we need to fill in TBDs
propose starting with a baseline using 10GBASE-T delays matching the delay spec in Clause 126.

SuggestedRemedy

max (bit time) = 25600
max (pause quanta) = 50
max (ns) = 10240 for 2.5G and 5120 for 5G

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **126** *SC* **126.1** *P* **65** *L* **24** # 84

McClellan, Brett Marvell

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

propose to accept fast retrain as written in the draft and remove the multiple editor's notes

SuggestedRemedy

remove editor's note on page 65 line 24, page 67 line 17

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **126** *SC* **126.1.3** *P* **67** *L* **18** # 85

McClellan, Brett Marvell

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

Loop timing is required for EEE, so non-loop timed implementations are unlikely.
Propose to accept baseline that loop timing is required as currently written in text.

SuggestedRemedy

on page 100 line 9 delete "An EEE-capable PHY shall support loop timing and loop timing shall be enabled on the slave
PHY."
page 116 line 40 delete "An EEE-capable PHY shall operate with loop timing when configured as SLAVE."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy, and remove strikeout text and related editor's note on loop timing. (like comment 29)

Cl **126** *SC* **126.1.3** *P* **67** *L* **25** # 86

McClellan, Brett Marvell

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

Propose to accept the editor's recommendation and delete the periodic training sequence as shown in strikeout

SuggestedRemedy

Delete strikeout text at:
page 96 line 50, page 98 line 20
page 101 line 34 to 37
page 128 lines 46 to 49
page 152 line 1
page 179 line 49
page 180 line 18 to 23

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **126** *SC* **126.1.3.3** *P* **71** *L* **36** # 87

McClellan, Brett Marvell

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

change 6 to 8 to match the refresh time proposed for Table 78-2. This is a baud scaled version of the 10GBASE-T refresh.

SuggestedRemedy

change 6 to 8

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See comment 80
Discuss with EEE presentations whether to follow BQ or Cl 55 refresh timing.
Align Table 78-2 with change.
Editor to search for other related text and align with decision.

Cl **126** *SC* **126.2.2.3.1** *P* **77** *L* **32** # 88

McClellan, Brett Marvell

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

change 4 to 8 to match the defined Alert sequence. Reflects that 2.5G/5G frames are half the 10G frame length.

SuggestedRemedy

change 4 to 8

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **126** *SC* **126.3.2.2.21** *P* **94** *L* **9** # 89

McClellan, Brett Marvell

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

Propose accepting a baseline for the sleep signal of 18 frames which is a baud rate scaled version of 10GBASE-T (9 frames x 2)

SuggestedRemedy

change 12 to 18
page 94 line 9 and line 11, page 96 line 1,page 105 line 2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See comment 80
Discuss with EEE presentations whether to follow BQ or Cl 55 sleep timing.
Align Table 78-2 with any change.
Editor to search for other affected text and align with decision.

Cl **126** *SC* **126.3.5** *P* **99** *L* **31** # 90

McClellan, Brett Marvell

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

Change 12 to 8 to match the refresh time proposed for Table 78-2. This is a baud scaled version of the 10GBASE-T refresh.

SuggestedRemedy

Change 12 to 8

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See comment 80
Discuss with EEE presentations whether to follow BQ or Cl 55 refresh timing.
Align Table 78-2 with any change.
Editor to search for other affected text and align with decision.

Cl **126** *SC* **126.3.2.3** *P* **95** *L* **36** # 91

McClellan, Brett — Marvell

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

Propose to accept the text as written (aligment is within 2 LDPC frames) and remove the editor's note.

SuggestedRemedy

remove the editor's note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **126** *SC* **126.3.5** *P* **99** *L* **29** # 92

McClellan, Brett — Marvell

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

change 244 to 248 to match the quiet time proposed for Table 78-2. This is a baud scaled version of the 10GBASE-T quiet time.

SuggestedRemedy

change 244 to 248

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See comment 80
Discuss with EEE presentations whether to follow BQ or Cl 55 sleep timing.
Align Table 78-2 with any changes.
Editor to search for other affected text and align with decision.

Cl **28** *SC* **28.5.3** *P* **23** *L* **40** # 93

Jones, Peter — Cisco Systems

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

IN the "28.5.3 Major capabilities/options" section for teh "Implementation supports a member of the MultiGBASE-T PHY Family (See Clause 1.4)", subclause used to refer to clause 55. This D0.1 text says clause 126. Shouldn't this refer to 55, 113 and 126 clauses?

SuggestedRemedy

refer to all three clauses.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Additionally, comment to be brought forward to 802.3bq for alignment. BQ adds an option for *40G, whereas BZ consolidates *10G and *40G to *MG

Cl **30** *SC* **30.6.1.1.5** *P* **29** *L* **6** # 94

Jones, Peter — Cisco Systems

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

Typo, extra space betwee 2.5 "2.5 GBASE-T PHY as specified in Clause 126"

SuggestedRemedy

change to "2.5GBASE-T PHY as specified in Clause 126"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **32** *L* **15** # 95

Jones, Peter — Cisco Systems

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

In Table 45–3—PMA/PMD registers and the reference text, items 1.133-1.144 have been changed to remove the "10GBASE-T" from the "Register name" column to match the approprite subclause. While 1.129-1.1.32 and 1.145-1.147 all have MultiGBASE-T qas part of the name.

I'm wondering why we don't be consintent and call all these "MultiGBASE-T SNR", "MultiGBASE-T Minimum margin",etc

SuggestedRemedy

Re-consider what the correct approach is, with a goal of maintaining consistency.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
This is correcting a mis-alignment of the naming in the table and the text in the base standard (802.3-2012 & P802.3bx D3p1). See comments 67 & 68

Cl **45** *SC* **45.2.1.6** *P* **33** *L* **51** # 96

Jones, Peter — Cisco Systems

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

Typo - "= 2.5GBASE-PMA/PMD"

SuggestedRemedy

fix - "= 2.5GBASE-T PMA/PMD"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Correct typo, align with resolution of comments on PMA/PMD vs PMA.

Cl **126** SC **126.1** P **65** L **8** # 97

Jones, Peter — Cisco Systems

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

Missing a sentance equicvelent ot ewhat follws for 5GBASE-T.

The 2.5GBASE-T PCS, PMA, and baseband medium specifications are intended for users who want 2.5Gb/s performance over balanced twisted-pair structured cabling systems.

SuggestedRemedy

add

The 5GBASE-T PCS, PMA, and baseband medium specifications are intended for users who want 5Gb/s performance over balanced twisted-pair structured cabling systems.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
(duplicate of comment 36)

Cl **126** SC **126.1.3.2** P **70** L **45** # 98

Jones, Peter — Cisco Systems

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

Missing cross ref in the following text
"First the symbol goes through a Tomlinson-Harashima precoder (THP), which maps the PAM16 input (as described in)"

SuggestedRemedy

insert correct cross reference

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Cross reference is 126.3.2.2.19 PAM16 bit mapping

Cl **99** SC P **6** L **16** # 99

Jones, Peter — Cisco Systems

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

WOild probbaly make sense to remove the "officers and members of the IEEE 802.3 working group" list as it will only be defined when we actually start WG ballot.

SuggestedRemedy

replace list with "[to be supplied at time of WG ballot] " or similar.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Will review list for currency at the time of WG ballot.

Cl **1** SC **1.4** P **20** L **23** # 100

Jones, Peter — Cisco Systems

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

you include "1.4.72b MultiGBASE-T: Specific BASE-T Ethernet PCS/PMA/PMDs at speeds in excess of 1000Mbps..". Why are you using 72b, 72c, 72d? They all become independent definitions orders alphabetically right?

SuggestedRemedy

just renumber to 1.4.somethign else?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
All numbering to be aligned with appropriate alphanumeric order in latest draft of 802.3bx

Cl **46** SC **46.6.3.1** P **58** L **27** # 101

Jones, Peter — Cisco Systems

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

Should G1 "PHY support of MAC data rate - Support MAC data rate of 2.5 Gb/s, 5 Gb/s, or 10 Gb/s" be split into three PICS rows, one per rate?

SuggestedRemedy

Consider if this is one PICS item or three. If three, split into G1.1, G1.2 G1.3 and renumber.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Like comment 114.
Implement resolution of comment 114.
Editor to review, update and revise PICs for similar new content.

Cl **126** SC **4.5.1** P **134** L **54** # 107

Sedarat, Hossein — Aquantia

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

The Master and Slave transition counts for fast retrain are too small which may create synchronization issues. Although the timers correspond to the same duration in time as in 10G, the number of Infofields to transmit and receieve are significantly smaller than that of normal training. There may be dependencies and assumption on receiving a minimum number of valid Infofield frames for this synchronization to work robustly. With these small counters, these minimums may be violated.

SuggestedRemedy

Use the proven counters from 10G. Namely, mtc=2^5 and stc=2^4.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **126** *SC* **126.4.3.1** *P* **131** *L* **1** # 108

Sedarat, Hossein Aquantia

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

The PBO table is taken from 40G and not valid for 5G and 2.5G.

SuggestedRemedy

Use the tables proposed in Sedarat_3bz_01_0715.pdf.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Discuss with presentation

Cl **126** *SC* **126.5.3.4** *P* **148** *L* **1** # 109

Sedarat, Hossein Aquantia

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

Per Shirani_3bz_01_020615.pdf, the upper PSD mask outside main bandwidth can go as high 6 dB below that of 10G.

SuggestedRemedy

Conform with slide 7 of Shirani_3bz_01_020615.pdf.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **126** *SC* **126.4.2.5.15** *P* **126** *L* **37** # 110

Sedarat, Hossein Aquantia

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

The requirement to equalize the 2 PBO levels for Master and Slave is different from 10G requirement. It requires a change in the PHY with no clear benefit.

SuggestedRemedy

Eliminate this requirement.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
This new requirement was inadvertently carried over by the editor from 802.3bq text. Alien crosstalk considerations in 802.3bz are more similar to Clause 55 than they are to 802.3bq

Cl **4** *SC* **4.4.2** *P* **21** *L* **17** # 111

Kim, Yong Broadcom

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

Table 4-2 - 2.5G and 5G addition to 10G may make logical sense, but does not work. "ipgStretchRatio" was added for 10G WAN PHY, which we do not support for 2.5G and 5G. The note 5 says it does not apply to 2.5G/5G. So 10G (w/ WAN PHY rate support) is the odd speed.

SuggestedRemedy

Either a) add a separate column for 2.5G/5G and enter "ipgStreatchRatio" to be "not applicable", or b) add 2.5G/5G to the 25G/40G column.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Prefer option (a) - add a separate column and remove the note.

Cl **28** *SC* **28.5** *P* **23** *L* **41** # 112

Kim, Yong Broadcom

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

MultiGBASE-T PHY Family -- not defined. the word "Family" is concern.

SuggestedRemedy

Either a) define MultiGBASE-T PHY as "PHY that belong to a set of ... in 1.4" and delete "Family" in 28.5, or b) define MultiGBASE-T PHY Family in 1.4.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.3.2.1.2** *P* **25** *L* **27** # 113

Kim, Yong Broadcom

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

I believe MIB defines new entry by appending, and NOT changing the previous entry. Inserting 2.5G and 5G in the middle are not consistent and may cause further issues when 802.3.1 takes on its work and just do cut-&-paste without noting the re-ordered list.

SuggestedRemedy

Put 2.5GBASE-T and 5GBASE-T entry after the 100GBASE-P (line 39).

If the comment is accepted, then also do this for
- 30.3.2.1.3 aPhyTypeList
- 30.6.1.1.5 aAutoNegLocalTechnologyAbility

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **46** *SC* **46.6.3.1** *P* **58** *L* **27** # 114

Kim, Yong — Broadcom

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

Concern, as this stands, all XGMII that is 10G only becomes non-compliant, if this draft moves forward. Obviously not intended objective.

BTW, 46.6.3.6 works, because how it is defined, existing 10G still complies with new definition.

SuggestedRemedy

Combining the 3 MAC rate support should be separated and Status made MAC rate depedant opinotal.
G1 ... Support MAC data rate of 10Gb/s...
G2 ... Support MAC data rate of 5Gb/s...
G3 ... Support MAC data rate of 2.5Gb/s...

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.
Duplicate of comment 101

Cl **45** *SC* **45-14** *P* **35** *L* **8** # 115

Kim, Yong — Broadcom

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

2.5G/5G extended ability register should be split into two bits. 2.5G extended ability, and 5G extended ability.

SuggestedRemedy

Please do so.

Suggest using 1.11.15 5G extended ability, and 1.11.14 2.5G extended ability.

And if the comment is accepted, Table 45-17e need to split (and use 1.21 for 2.5G extended ability), and new register 1.22 should be defined for 5G extended ability.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Task force to discuss conservation of registers, expected need for bits and precedents in 802.3

Cl **126** *SC* **126.6.1.1** *P* **153** *L* **33** # 116

Kim, Yong — Broadcom

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

U21 40GBASE-T LD PMA traning reset request --- ? Shouldn't this be deleted? Not a part of 802.3bz but...

SuggestedRemedy

If I am correct, delete U21 entry of 40GBASE-T LD PMA training reset request.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
802.3bq D2.1 currently still has the periodic training sequence. There is an unsatisfied comment to delete this, though. Editor to track and keep aligned with 802.3bq draft.

Cl **126** *SC* **126.1.3.3** *P* **71** *L* **40** # 117

McClellan, Brett — Marvell

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

In 10GBASE-T the Alert signal is aligned to the start of the 256 symbol frame and the 256 symbol alignment pattern during PAM2 training. The current text allows a misalignment to the training pattern.

SuggestedRemedy

Change “The alert signal begins on a LDPC frame boundary, but has no fixed relationship to the quiet-refresh cycle.” To “The alert signal begins on a LDPC 2-frame 256 4D-symbol boundary aligned to the inversion on pair A during PMA training, but has no fixed relationship to the quiet-refresh cycle.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.