Cl **00** *SC* **0** *P* *L* # 192

Marris, Arthur — Cadence Design Syste

Comment Type **TR** *Comment Status* **A** *25G*

What's the story regarding including 25GBASE-T in the 802.3bq draft.

SuggestedRemedy

Now that an objective has been added to the PAR to include 25GBASE-T please give a time-line for including 25GBASE-T in the draft.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
Inclusion of 25G in PAR was not complete at time of ballot close. Assuming NESCOM approves PAR, 25G will content will be included into next WG ballot cycle
See zimmerman_3bq_02a_0915.pdf for inclusion of 25G content, which is expected in the next draft of 802.3bq

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Cl **01** *SC* **1.3** *P* **24** *L* **11** # 153

HESS, DAVE — CORD DATA

Comment Type **ER** *Comment Status* **A** *Refs*

UPDATE REFERENCE:
The official project listing for ISO/IEC 11801-1 is now given as "Edition 1".
CHANGE "ISO/IEC 11801-1 Edition 3" TO "ISO/IEC 11801-1 Edition 1",
1 place(s)

SuggestedRemedy

CHANGE:
"ISO/IEC 11801-1 Edition 3 (draft), Information technology - Generic cabling for customer premises"
TO:
"ISO/IEC 11801-1 Edition 1 (draft), Information technology - Generic cabling for customer premises"

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
See comment 154

Cl **01** *SC* **1.4** *P* **24** *L* **31** # 154

HESS, DAVE — CORD DATA

Comment Type **ER** *Comment Status* **A** *Refs*

UPDATE REFERENCE:
The official project listing for ISO/IEC 11801-1 is now given as "Edition 1".
CHANGE "ISO/IEC 11801-1 Edition 3" TO "ISO/IEC 11801-1 Edition 1",
2 place(s)

SuggestedRemedy

CHANGE:
"ISO/IEC 11801-1 Edition 3"
TO:
"ISO/IEC 11801-1 Edition 1"

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
Change "ISO/IEC 11801-1 Edition 3" to "ISO/IEC 11801-1" per liaison officer's suggestion.
Add "Editor's Note (to be removed prior to publication) - Publication editor please upgrade this to a dated reference before publication."

Cl **01** *SC* **1.4** *P* **24** *L* **39** # 186

Donahue, Curtis — UNH-IOL

Comment Type **T** *Comment Status* **A** *Refs*

Definition for MultiGBASE-T is different in bq draft vs bz draft. Is this intentional? I would expect the definitions to be the same in both.

Note: Subclause, page, and line references are from CLEAN version of D2.2.

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Definitions are different because bq is ahead of bz, and therefore bz assumes bq content, but bq does not assume bz content.

Cl **01** *SC* **1.4.278a** *P* **24** *L* **39** # 191

Klempa, Michael — UNH IOL

Comment Type **T** *Comment Status* **R** *Refs*

MultiGBASE-T is defined differently in bq than bz. I would assume they should be defined the same, and bq would include 2.5G and 5G.

SuggestedRemedy

Define MultiGBASE-T as:
PHYs that belong to the set of specific BASE-T Ethernet PCS/PMAs at speeds in excess of 1000 Mb/s, including 2.5GBASE-T, 5GBASE-T, 10GBASE-T and 40GBASE-T. (See IEEE Std. 802.3 Clause 126 (2.5GBASE-T and 5GBASE-T), IEEE Std. 802.3 Clause 55 and IEEE Std. 802.3 Clause 113.)

Response *Response Status* **C**

REJECT.
See comment 186 for relationship of bq and bz text

Cl **113** *SC* **1`13.8.2.1** *P* **180** *L* **17** # 212

Moffitt, Bryan — CommScope

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

is there something unique about MDI RL that needs the plot?

SuggestedRemedy

delete plot

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Plot was put in in response to commenters request on previous WG drafts.

Cl **113** *SC* **113.1** *P* *L* # 156

Lusted, Kent — Intel

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

Comment #9 against Draft 2.1 asks for the subclause 113.1 to define the mandatory and optional sublayers required for a complete physical layer, as is done for all 10GBASE-R, 40GBASE-R, and 100GBASE-R PHYs, in a table format like Table 84-1.

As a reader and user of this specification, I find it valuable to have this table in the start of the PCS/PMA clause.

SuggestedRemedy

As per the original comment #9, Add a table "Physical Layer clauses associated with the 40GBASE-T PCS/PMA" list the
"associated clauses" and indicate "optional" or "mandatory" for each. (similar to Table 84-1 in the base document)

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
See comment 215 and bains_3bq_01_0915.pdf

Cl **113** *SC* **113.1** *P* *L* # 155

Dove, Daniel — DNSI

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

Comment #9 against Draft 2.1 asks for the subclause 113.1 to define the mandatory and optional sublayers required for a complete physical layer, as is done for all 10GBASE-R, 40GBASE-R, and 100GBASE-R PHYs, in a table format like Table 84-1.

As a reader and user of this specification, I find it valuable to have this table in the start of the PCS/PMA clause.

SuggestedRemedy

As per the original comment #9, Add a table "Physical Layer clauses associated with the 40GBASE-T PCS/PMA" list the
"associated clauses" and indicate "optional" or "mandatory" for each. (similar to Table 84-1 in the base document)

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
See comment 215 and bains_3bq_01_0915.pdf

Cl **113** *SC* **113.1** *P* **67** *L* **10** # 151

HESS, DAVE CORD DATA

Comment Type **ER** *Comment Status* **A** *Refs*

UPDATE REFERENCE:
The official project listing for ISO/IEC 11801-1 is now given as "Edition 1".
CHANGE "ISO/IEC 11801-1 Edition 3" TO "ISO/IEC 11801-1 Edition 1",
1 place(s)

SuggestedRemedy

CHANGE:
"ISO/IEC 11801-1 Edition 3"
TO:
"ISO/IEC 11801-1 Edition 1"

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
See comment 154

Cl **113** *SC* **113.1.1** *P* **68** *L* **13** # 162

Trowbridge, Steve Alcatel-Lucent

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

The dashed lines from the OSI stack to the rest of the figure aren't the same style as the rest of the standard. The line between the data link and physical layers does't extend all the way to the corner of the MAC box on the right as the rest of the figures in the standard

SuggestedRemedy

Clean up the figure so that the line styles match the rest of the standard and the lines all continue to where they are supposed to go

Response *Response Status* **C**

ACCEPT.
Commenter is advised that these same minor defects exist in Clause 55 for 802.3bx d3p2, and may consider editorial clean-up next time a revision comes around.

Cl **113** *SC* **113.1.1** *P* **68** *L* **2** # 217

Brown, Matthew APM

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

According to subclause 80.1.1 and this paragraph, an XLAUI interface (either chip-to-chip or chip-to-module or possibly both) is supported between the MAC device and the 40GBASE-T PHY device. Furthermore, a second Clause 82 PCS is required to provide a XLGMII between the XLAUI and the Clause 113 PCS.

In this case, there are now 3 PCS sublayers within the physical layer to be managed using MDIO. Both Clause 82 and Clause 113 require the PCS to be managed as MMD 3.

Clause 83.1.4 provides guidelines for MMD numbering for PMA sublayers and examples are provided in Figure 83-2 and Annex 83C. Something similar should be provided for the multiple PCS sublayers used in a 40GBASE-T physical layer with one or more XLAUI links.

SuggestedRemedy

Provide guidelines for MMD numbering of PCS sublayers when one or more XLAUI are used in a 40GBASE-T physical layer.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
(XLAUI text deleted)
See comment 215 and bains_3bq_01_0915.pdf
Application to BASE-T may be different from optical. Consider with presentations on application to BASE-T.

Cl **113** *SC* **113.1.1** *P* **68** *L* **2** # 215

Brown, Matthew APM

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

According to subclause 80.1.1 and this paragraph, an XLAUI interface (either chip-to-chip or chip-to-module or possibly both) is supported between the MAC device and the 40GBASE-T PHY device. It stated here that the connection using the XLAUI will "use the PCS defined in Clause 82". However, no more details are provided.

For the various 40GBASE-R clauses a number of architecture examples are shown in subclause 83.1.4 and Annex 83C. None of these include the case where the PHY device regenerates the PCS as is required for 40GBASE-T.

SuggestedRemedy

Provide one or more example layering diagrams similar to Figure 83-2 demonstrating the expected sublayer stack-up for the case when one or more XLAUI are used.

Example
MAC
RS (Clause 81)
XLGMII (Clause 81)
PCS (Clause 82)
PMA (Clause 83)
XLAUI (C2M Annex 83B or C2C Annex 83A)
PMA (Clause 83)
PCS (Clause 82) *** new ***
XLGMII (Clause 81) *** new ***
PCS (Clause 113)
PMA (Clause 113)

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
P68 L1 - 6: retain "The 40GBASE-T PHY service interface is the XLGMII, which is defined in Clause 81." Delete: "The 40GBASE-T PHY may connect to the 40 Gb/s Attachment Unit Interface (XLAUI) defined in Annex 83B using the PCS defined in Clause 82."

P2 L7 Delete "XLAUI" from keywords

P62 L39 (Table 80-2) Delete "O" from columns for Cl. 82, 83, 83A, 83B.

Application to BASE-T may be different from optical.

See bains_3bq_01_0915.pdf

Cl **113** *SC* **113.1.1** *P* **68** *L* **2** # 214

Brown, Matthew APM

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

According to subclause 80.1.1, the 40GBASE-T PHY device may connect to the MAC device through either a chip-to-chip XLAUI (Annex 83A) or chip-to-chip XLAUI (Annex 83B). However, this paragraph lists only Annex 83B.

SuggestedRemedy

Change "Annex 83B" to "Annex 83A and Annex 83B".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
and bains_3bq_01_0915.pdf
Discuss with contribution detailing MAC-PHY interface specification and architecture for BASE-T

Cl **113** *SC* **113.1.2** *P* **71** *L* **30** # 163

Trowbridge, Steve Alcatel-Lucent

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

Several sloppy things in the figure: many of the dots aren't positioned over the actual intersection of the lines they are supposed to connect. Some of the lines don't meet around corners. Some of the "T" intersections of lines extend across the other side of the line where they are supposed to terminate

SuggestedRemedy

Zoom in close and nudge the various elements to line up and tidy up the figure.

Response *Response Status* **C**

ACCEPT.
Commenter is advised that these same minor defects exist in Clause 55 for 802.3bx d3p2, and may consider editorial clean-up next time a revision comes around.

Cl **113** *SC* **113.12.6** *P* **191** *L* **44** # 178
Donahue, Curtis UNH-IOL

Comment Type **E** *Comment Status* **A** *PICS*

The commenter recognizes this text as unchanged/out of scope of this review.

"LT" is used in the Status field of PME22, but not listed in 113.12.2.

Note: Subclause, page, and line references are from CLEAN version of D2.2.

SuggestedRemedy

Add LT and appropriate supporting text to the table in 113.12.2.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Delete LT: from P 191 L44

(LT referred to optional loop timing, now mandatory in 40GBASE-T)

Cl **113** *SC* **113.12.7** *P* **153** *L* **37** # 183
Donahue, Curtis UNH-IOL

Comment Type **E** *Comment Status* **A** *PICS*

The commenter recognizes this text as unchanged/out of scope of this review

PME15 lists "Test mode 7 operations" as mandatory but there isnt any shall in this paragraph. Should there be? All other text in this subclause for the other 6 test modes have "shalls".

Note: Subclause, page, and line references are from CLEAN version of D2.2.

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change P153 L40 from:
This mode reuses the 40GBASE-T scrambler and is defined in detail in 113.3.3.
to read:
This mode shall reuse the 40GBASE-T scrambler defined in detail in 113.3.3.

Commenter is advised same defect exists in Clause 55 and may wish to file a maintenance request.

Cl **113** *SC* **113.12.7** *P* **193** *L* **14** # 180
Donahue, Curtis UNH-IOL

Comment Type **E** *Comment Status* **A** *PICS*

The commenter recognizes this text as unchanged/out of scope of this review.

Add "Equation (113-19)" and "Equation (113-20)" to the Value/Comment field of LKS5.

Note: Subclause, page, and line references are from CLEAN version of D2.2.

SuggestedRemedy

See comment

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.12.7** *P* **193** *L* **5** # 179
Donahue, Curtis UNH-IOL

Comment Type **T** *Comment Status* **A** *PICS*

The commenter recognizes this text as unchanged/out of scope of this review.

Add PICS for parameters defined in 113.7.4 Direct attach cable assembly - Short Reach Mode. Additionally add PICS for short reach mode parameters outside of 113.7.4.

Note: Subclause, page, and line references are from CLEAN version of D2.2.

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.12.7** *P* **193** *L* **8** # 181
Donahue, Curtis UNH-IOL

Comment Type **E** *Comment Status* **A** *PICS*

The commenter recognizes this text as unchanged/out of scope of this review

Change "Equation (113-11)" to "Equation (113-13)".

Note: Subclause, page, and line references are from CLEAN version of D2.2.

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.12.9** *P* **194** *L* **23** # 177

Donahue, Curtis UNH-IOL

Comment Type **E** *Comment Status* **A** *PICS*

The commenter recognizes this text as unchanged/out of scope of this review.

"INS" is used in the Status field of ENV4 (also ENV2), but not listed in 113.12.2.

Note: Subclause, page, and line references are from CLEAN version of D2.2.

SuggestedRemedy

Add INS and appropriate supporting text to the table in 113.12.2.

Response *Response Status* **C**

ACCEPT.
Commenter is advised that while the option INS is defined in other 802.3 clauses (e.g., clauses 40 and other as "Items marked with INS include installation practices and cable specifications not applicable to a PHY manufacturer", same error exists in clause 55, and commenter may wish to submit a maintenance request.

Cl **113** *SC* **113.3.2** *P* **85** *L* **18** # 157

Trowbridge, Steve Alcatel-Lucent

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

Some sloppiness in Figure 113.5. Not all the arrow heads are at the same level (some go over the line and some don't meet it). Some dots not over the lines they connect. Some lines don't connect where they are supposed to.

SuggestedRemedy

Zoom in close and nudge the elements of the figure to align and tidy it up.

Response *Response Status* **C**

ACCEPT.
Commenter is advised that these same minor defects exist in Clause 55 for 802.3bx d3p2, and may consider editorial clean-up next time a revision comes around.

Cl **113** *SC* **113.3.2.2.16** *P* **94** *L* **38** # 232

Slavick, Jeff Avago Technologies

Comment Type **TR** *Comment Status* **R** *PCS*

Shifting all the control blocks around is un-necessary effort since all input locations could end up at all output locations. All that is necessary is to shift the first control block to the head of the list. Then each output location has 2 output locations n or n-1, (except for location 0 which can get data from all 8 input locations). Follow up to D2.1 comment #2

SuggestedRemedy

Change:
Within the group of eight 65-bit blocks, let C be the set of k integers corresponding to the values of j that have tx_coded_j<0> = 1, and U be the set of 8-k integers corresponding to the values of j that have tx_cod-ed_j<0> = 0, where the integers that comprise both C and U are arranged in ascending order. For instance, if tx_coded_1<0>=1 and tx_coded_4<0>=1, C = {1,4), and U = {0,2,3,5,6,7}.

To:
Within the group of eight 65-bit blocks, let the set C be the integer corresponding to the first values of j that has tx_coded_j<0> = 1, and U be the set of 7 integers corresponding to the remaining values of j, where the integers that comprise both C and U are arranged in ascending order. For instance, if tx_coded_1<0>=1 and tx_coded_4<0>=1, C = {1), and U = {0,2,3,4,5,6,7}.

Change:
A continuation flag (FC) that if set to 1 indicates that another control block is to follow, and if set to 0 indicates that this is the last control block in the group of 8 transcoded 65B blocks, followed by

To:
A parity bit (PB) that is the even parity of the BlockType and Position fields, followed by

Change FC to PB on line 7 of page 95

Change:
Example #1: C = {1,4}, and U = {0,2,3,5,6,7}, with the first control block being 0x1E, and the second being 0x78. Thus:
1) 65B control words are present, so the 513B control flag bit gets set to 0
2) The first control word is C0 where Position = 0x1, and BlockType = 0x8. Since this is not the last control word the continuation flag FC = 1. Thus the 513B control word for this block will be:
a. C0 Control Word = {1,0x1, 0x8} = 1 100 0001 in bit order of transmission
4) The second control word is C1 where Position = 0x4, and BlockType = 0x7. Since this is the last control word the continuation flag FC = 0. Thus the 513B control word for this block will be:
a. C4 Control Word = {0,0x4, 0x7} = 0 001 1110 in bit order of transmission
5) After this the payload of the remaining data blocks is placed

To:
Example #1: C = {1}, and U = {0,2,3,4,5,6,7}, with the first control block being 0x1E Thus:

1) 65B control words are present, so the 513B control flag bit gets set to 0
2) The first control word is C0 where Position = 0x1, BlockType = 0x8, and PB = 0 since the even parity of 0x1 and 0x8 is 0. Thus the 513B control word for this block will be:
a. C0 Control Word = {0,0x1, 0x8} = 0 100 0001 in bit order of transmission
3) After this the payload of the remaining blocks is placed

Change:
Example #2: C = {7}, and U = {0,1,2,3,4,5,6}, with the control block being 0xB4. Thus:
1) 65B control words are present, so the 513B control flag bit gets set to 0
2) The first and only control word is C0 where Position = 0x7, and BlockType = 0x5. Since this is also the last control word the continuation flag FC = 0. Thus the 513B control word for this block will be:
a. C0 Control Word = {0,0x7, 0x5} = 0 111 1010 in bit order of transmission
4) After this the payload of the remaining data blocks is placed

To:
Example #2: C = {7}, and U = {0,1,2,3,4,5,6}, with the control block being 0xB4. Thus:
1) 65B control words are present, so the 513B control flag bit gets set to 0
2) The first control word is C0 where Position = 0x7, BlockType = 0x5, and PB = 1 since the even parity of 0x7 and 0x5 is 1. Thus the 513B control word for this block will be:
a. C0 Control Word = {0,0x7, 0x5} = 1 111 1010 in bit order of transmission
4) After this the payload of the remaining data blocks is placed

Update the Figure 113-10 to match the new encoding scheme.

Response *Response Status* **W**

REJECT.
No defect in the draft - just another way of doing the same function, and likely to cause more churn getting it right, as there are at least some errors in the proposed text. Advantage of rearrangement is lost when used with a blocked frame processing scheme like is used in 40GBASE-T, see presentation Langner_3bq_01_0915.pdf.

Motion to accept the Editor's proposed response (reject the comment):
M: G. Zimmerman
S: J. Lewis
Y: 15
N: 0
A: 11

Cl **113** *SC* **113.3.2.2.16** *P* **96** *L* **24** # 231
Slavick, Jeff Avago Technologies

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

In the Examples 1&2 step 3 is missing

SuggestedRemedy

Renumber Example 1 & 2 appropriately

Response *Response Status* **W**

ACCEPT.

Cl **113** *SC* **113.3.2.2.24** *P* **103** *L* **18** # 220
Regev, Alon Ixia

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

"a analogous manner" should be "an analogous manner"

SuggestedRemedy

change "a analogous manner" to "an analogous manner"

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.3.3.2.20** *P* **100** *L* **39** # 159
Trowbridge, Steve Alcatel-Lucent

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

The arrowhead down from the "Switch" box overlaps the word "Output" below.

SuggestedRemedy

Move the word "Output" out from under the arrow head

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.3.3.2.5** *P* *L* # 158

Trowbridge, Steve — Alcatel-Lucent

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

Some sloppiness in Figure 113-7: also in previous figure 113-6 although less pronounced. The box for 513B block #2 is taller than the box for 513B block #1. What looks like bit divisions within the 513B blocks and 65B blocks isn't, and all of the small lines aren't the same length or at the same level, but since they don't correspond to any fixed unit of information, perhaps just eliminate the small lines rather than fix them.

SuggestedRemedy

Zoom in close and tidy up the figure(s) as indicated.

Response *Response Status* **C**

ACCEPT.
Commenter is advised that these same minor defects exist in Clause 55 for 802.3bx d3p2, and may consider editorial clean-up next time a revision comes around.

Cl **113** *SC* **113.3.5.3** *P* **110** *L* **33** # 133

McClellan, Brett — Marvell

Comment Type **TR** *Comment Status* **A** *Training - PTS*

"The training sequence without periodic reinitialization described in 113.3.4 shall be used during the LPI mode, with the scramblers free-running starting in the state PMA_PBO_Exch. If scrambler reinitialization is used for normal training, it shall be disabled and the scramblers shall begin free-running when the PHY Control state diagram is in the state PMA_PBO_Exch and the receiver detects a valid requested transmitter PBO setting (Octet 7 Valid<7> equal to 1)."
This statement is placed in an optional subclause for devices that support EEE. Does that mean only EEE capable devices are required to comply? Further, this statement contradicts the statement in 113.4.2.5.16 that scramblers start free-running at the PCS_Test state.
113.4.2.5.16 Fast retrain function is also an optional subclause.

SuggestedRemedy

For multiple reasons given in McClellan_3bq_01_0715, delete this text in combination with other deletions outlined in comment #93 on draft 2.0.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See comment 134.

Cl **113** *SC* **113.3.5.3** *P* **110** *L* **33** # 123

Lo, William — Marvell Semiconductor

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

Need to zero out info field

SuggestedRemedy

Change:
as is shown in Figure 113–14
to:
as is shown in Figure 113–14 with the exception that the InfoField consists of a sequence of 128 zeros.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.3.5.3** *P* **110** *L* **36** # 190

Feyh, German — Broadcom Corporation

Comment Type **T** *Comment Status* **D** *Training - PTS*

Responding to concerns raised in comment #93 the periodic training sequence description is updated.

SuggestedRemedy

113.3.5.3 Refresh period signaling
Change text in line 36 to 38 from:
"the scramblers shall begin free-running when the PHY Control state diagram is in the state PMA_PBO_Exch and the receiver detects a valid requested transmitter PBO setting (Octet 7 Valid<7> equal
to 1)." to
"the scramblers shall begin free-running as the PHY Control state diagram enters the state PMA_Coeff_Exch state and enables the requested PBO."
113.4.2.5.15 Startup Sequence page 135, after line 47 add text"
If periodic initialization of the scrambler is used, the scramblers are set to free running after each transition_count reaches zero.
113.4.2.5.16 Fast retrain function page 137, line 47 replace:
"when the PHY Control state diagram enters the PCS_Test state and the variable fr_active is FALSE." by
"when the PHY Control state diagram enters the PMA_Coeff_Exch state."

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Discuss with 133 & 134
If PTS is retained and modified, make editorial changes to the proposed text to read:
"the scramblers shall begin free-running as the PHY Control state diagram enters the PMA_Coeff_Exch state and enables the requested PBO."
113.4.2.5.15 Startup Sequence page 135, after line 47 add text"
If periodic initialization of the scrambler is used, the scramblers are set to free running after each transition_count reaches zero.
113.4.2.5.16 Fast retrain function page 137, line 47 replace:
"when the PHY Control state diagram enters the PCS_Test state and the variable fr_active is FALSE." by
"when the PHY Control state diagram enters the PMA_Coeff_Exch state."

Cl **113** *SC* **113.3.6.2.2** *P* **113** *L* **16** # 226

Regev, Alon — Ixia

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

"!tx _refresh_active" should be "!tx_refresh_active"

SuggestedRemedy

change "!tx _refresh_active" to "!tx_refresh_active"

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.3.6.2.3** *P* **113** *L* **45** # 221

Regev, Alon — Ixia

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

"it's" should be "its"

SuggestedRemedy

change "it's" to "its"

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.4.1** *P* **124** *L* **37** # 160

Trowbridge, Steve — Alcatel-Lucent

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

The term "received_clock" runs over the edge of the box to the right of it.

SuggestedRemedy

Shift the words down, or make them smaller font, or increase the space between the boxes so that the words fit. While editing the figure, take the opportunity to zoom in close and nudge some of the dots closer to the intersection of lines and making sure that lines meet around corners.

Response *Response Status* **C**

ACCEPT.
Commenter is advised that these same minor defects exist in Clause 55 for 802.3bx d3p2, and may consider editorial clean-up next time a revision comes around.

Cl **113** *SC* **113.4.2.5.15** *P* **136** *L* **40** # 227

Regev, Alon — Ixia

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

"rem_rcvr status" should be "rem_rcvr_status"

SuggestedRemedy

change "rem_rcvr status" to "rem_rcvr_status"

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.4.2.5.16** *P* **137** *L* **45** # 134

McClellan, Brett — Marvell

Comment Type **TR** *Comment Status* **A** *Training - PTS*

"The training sequence without periodic re-initialization described in 113.3.4 shall be used during fast retraining, with the scramblers free-running from PCS Reset. If scrambler re-initialization is used for normal training, it shall be disabled and the scramblers shall begin free-running when the PHY Control
state diagram enters the PCS_Test state and the variable fr_active is FALSE."
This statement is placed in an optional subclause for devices that support Fast Retrain. Does that mean only Fast Retrain capable devices are required to comply? Further, this statement contradicts the statement in 113.3.5.3 that scramblers start free-running at the PMA_PBO_Exch state. 113.3.5.3 Refresh period signaling is also an optional subclause.

SuggestedRemedy

For multiple reasons given in McClellan_3bq_01_0715, delete this text in combination with other deletions outlined in comment #93 on draft 2.0.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Discuss with comments 133 & 190,
Implement changes from comment 93 d2.0:

113.3.4 PMA training side-stream scrambler polynomials
Remove editor's note and
remove text:
"Moreover during Auto-Negotiation each transceiver may request the remote transceiver to reinitialize the values of its scrambler state after every 16384 symbol periods, to generate a periodically repeating pattern with repetition period 16384. The initial 33-bit values of the scrambler state shall be generated by combining 0x39A422 for the 22 MSBs and random value SB10-SB0 from Table 113-20 generated by the local device for the 11 LSBs as shown in Figure 113-14."

Figure 113-14 remove text from "n mod 16384 = 0" through "else:"

113.3.5.3 Refresh period signaling
delete the text:
" without periodic reinitialization described in 113.3.4"
delete the text:
"with the scramblers free-running starting in the state PMA_PBO_Exch. If
scrambler reinitialization is used for normal training, it shall be disabled and the scramblers shall begin free-running when the PHY Control state diagram is in the state PMA_PBO_Exch and the receiver detects a valid requested transmitter PBO setting (Oct 7 Valid<7> equal to 1)."

113.4.2.5.15 page 141 line 15
change "The training sequence without periodic re-initialization described in 113.3.4 shall be used during fast retraining, with the scramblers free-running from PCS Reset. If scrambler reinitialization is used for normal training, it shall be disabled and the scramblers shall begin free running when the PHY Control state diagram enters the PCS_Test state and the variable

fr_active is FALSE."
to "The training sequence in 113.3.4 shall be used during fast retraining."

113.6.1 Support for Auto-Negotiation
page 168 line 38 delete item c)

113.12.3 Physical Coding Sublayer (PCS)
delete the line items:
PCT19 PMA training scrambler reset
PCT31 Disable scrambler reinitialization
under "PCT30 LPI scrambler" delete the text:
"The training sequence without periodic re-initialization described in 113.3.5 shall be used"

Release AN register bits allocated for 40GBASE-T LD PMA training reset request, and LP PMA training reset request.

Editor to review with commenter that all necessary changes have been implemented.

Cl **113** *SC* **113.4.2.5.3** *P* **131** *L* **9** # 161

Trowbridge, Steve Alcatel-Lucent

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

Figure 113-27 is drawn sloppily.

SuggestedRemedy

Make sure the small lines at the bottom between bit positions are the same height and evenly spaced. The words "bit7", "bit6", etc., seem to be a few pixels off from each other in vertical spacing.

Response *Response Status* **C**

ACCEPT.
Commenter is advised that these same minor defects exist in Clause 55 for 802.3bx d3p2, and may consider editorial clean-up next time a revision comes around.

Cl **113** *SC* **113.4.5.1** *P* **143** *L* **54** # 185

Donahue, Curtis UNH-IOL

Comment Type **E** *Comment Status* **A** *PICS*

The commenter recognizes this text as unchanged/out of scope of this review

Add PICS for mtc and stc.

Note: Subclause, page, and line references are from CLEAN version of D2.2.

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Commenter is requested to provide proposed text.
Commenter is advised that the same issue exists in Clause 55, and may wish to file a maintenance request.

Cl **113** *SC* **113.4.5.4** *P* **145** *L* **1** # 182

Donahue, Curtis UNH-IOL

Comment Type **E** *Comment Status* **A** *PICS*

The commenter recognizes this text as unchanged/out of scope of this review

Add PICS for lpi_refresh_rx_timer, link_fail_sig_timer, and fr_maxwait_timer.

Note: Subclause, page, and line references are from CLEAN version of D2.2.

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT.
Commenter is advised same issues exist in Clause 55 and may wish to submit a maintenance request

Cl **113** *SC* **113.4.6.3** *P* **149** *L* **20** # 228

Regev, Alon Ixia

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

"maxwait_time_done" should be "maxwait_timer_done"

SuggestedRemedy

change "maxwait_time_done" to "maxwait_timer_done"

Response *Response Status* **C**

ACCEPT.
Commenter is advised that same error exists in 802.3bx D3p2, Clause 55.4.6.3, Figure 55-31, and may wish to submit a maintenance request.

Cl **113** *SC* **113.4.6.5** *P* **151** *L* **15** # 229

Regev, Alon Ixia

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

"start_link_fail_sig_timer" should be "start link_fail_sig_timer"

SuggestedRemedy

change "start_link_fail_sig_timer" to "start link_fail_sig_timer"

Response *Response Status* **C**

ACCEPT.
Commenter is advised that same error exists in 802.3bx D3p2, Clause 55.4.6.3, Figure 55-31, and may wish to submit a maintenance request.

Cl **113** *SC* **113.5.2** *P* **151** *L* **36** # 234

Chini, Ahmad Broadcom

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

For transmit distortion test mode 4, figure 113-36, the test does not have the remote signal present which pushes the signal into non-linearity. In order to test non linearity, an external tone needs to be injected into local transmitter, representing maximum level of remote PHY signal. See clause 40 for similar test set up.

SuggestedRemedy

See comment

Response *Response Status* **C**

REJECT.
This was considered during 10GBASE-T. Stressing the transmitter with a remote signal to simulate a short line is unnecessary because of the use of power back off.

Cl **113** *SC* **113.5.3.2** *P* *L* # 233

NoName

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

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **113** *SC* **113.6.1** *P* **160** *L* **9** # 124

Lo, William Marvell Semiconductor

Comment Type **TR** *Comment Status* **A** *Autoneg*

Auto-Negotiation is not used to determine fast retrain capability or EEE capability

SuggestedRemedy

Delete items d) and e)

Response *Response Status* **W**

ACCEPT.

Cl **113** *SC* **113.6.1.2** *P* **161** *L* **42** # 132

McClellan, Brett Marvell

Comment Type **T** *Comment Status* **A** *Autoneg*

The definition for U20 does not match the definition in Clause 55 page 57 line 13

SuggestedRemedy

add this line to the definition:
"This bit is not defined for 10GBASE-T but reserved for future use."

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.6.2** *P* **164** *L* **39** # 230

Regev, Alon — Ixia

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

"PMA_CONFIG.indicate" should be "PMA_CONFIG.indication" (to match the definition in 113.2.2.2).

SuggestedRemedy

change "PMA_CONFIG.indicate" to "PMA_CONFIG.indication" (in 2 locations in the draft)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Commenter is advised that same errors exists in 802.3bx D3p2, Clause 55 and may wish to submit a maintenance request.

Cl **113** *SC* **113.7** *P* **165** *L* **1** # 152

HESS, DAVE — CORD DATA

Comment Type **ER** *Comment Status* **A** *Refs*

UPDATE REFERENCE:
The official project listing for ISO/IEC 11801-1 is now given as "Edition 1".
CHANGE "ISO/IEC 11801-1 Edition 3" TO "ISO/IEC 11801-1 Edition 1",
3 place(s)

SuggestedRemedy

CHANGE:
"ISO/IEC 11801-1 Edition 3"
TO:
"ISO/IEC 11801-1 Edition 1"

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
See comment 154

Cl **113** *SC* **113.7.1** *P* **165** *L* **12** # 193

Moffitt, Bryan — CommScope

Comment Type **E** *Comment Status* **D** *Refs*

has three references to the table below and seems like it could be written with more direct language

SuggestedRemedy

no suggestions

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Text is unchanged except for cross-reference update - out of scope and Commenter fails to provide sufficient remedy

Cl **113** *SC* **113.7.2.4.1** *P* **166** *L* **50** # 194

Moffitt, Bryan — CommScope

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

equation is offset from parameter (also in following NEXT MDNEXT ACRF)

SuggestedRemedy

fix offset

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.7.2.4.4** *P* **169** *L* **7** # 195

Moffitt, Bryan — CommScope

Comment Type **E** *Comment Status* **R** *Cabling*

Why do we define FEXT and ACRF but don't define any of the other parameters? (and pg 174 line 45)

SuggestedRemedy

remove them or add definitions to the other parameter for consistent treatment.

Response *Response Status* **C**

REJECT.
Editor notes this comment is out of scope for this review

The definition of FEXT appears to be a carry over from 1000BASE-T. Consider deletion in future drafts.

Cl **113** *SC* **113.7.2.4.5** *P* **170** *L* **4** # 196
Moffitt, Bryan CommScope

Comment Type **T** *Comment Status* **A** *Cabling*

Measurement floor specification is missing.

SuggestedRemedy

add: Calculations that result in MDACRF loss values greater than 62 dB shall revert to a requirement of 62 dB minimum.

Response *Response Status* **C**

ACCEPT.
Editor notes this comment is out of scope for this review

Cl **113** *SC* **113.7.3** *P* **170** *L* **37** # 197
Moffitt, Bryan CommScope

Comment Type **E** *Comment Status* **R** *Cabling*

alien FEXT is not specified

SuggestedRemedy

Identify PSAACRF instead

Response *Response Status* **C**

REJECT.
MDAFEXT as specified in 113.7.3.2

Cl **113** *SC* **113.7.3.1.1** *P* **171** *L* **19** # 198
Moffitt, Bryan CommScope

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

there is no point in stating the equation from 1 to 100 MHZ since it is below 75 dB

SuggestedRemedy

use single equation

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Editor notes this comment is out of scope for this review

Cl **113** *SC* **113.7.3.1.1** *P* **171** *L* **28** # 199
Moffitt, Bryan CommScope

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

The statement is vague and could apply to either 113-27 or 113-28 above

SuggestedRemedy

When equation 113-28 values are greater than 75 dB, they shall revert to 75 dB.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.7.3.2** *P* **171** *L* **34** # 200
Moffitt, Bryan CommScope

Comment Type **E** *Comment Status* **R** *Cabling*

not specified

SuggestedRemedy

change "is specified" to "must be great enough"

Response *Response Status* **C**

REJECT.
Language is consistent with other 802.3 usage.

Editor notes this comment is out of scope for this review.

Cl **113** *SC* **113.7.3.2.1** *P* **172** *L* **14** # 202
Moffitt, Bryan CommScope

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

The statement is vague and could apply to either of the 2 equations above, and why did we switch to "for information only" form?

SuggestedRemedy

When equation 113-30 values are greater than 75 dB, they shall revert to 75 dB.

Response *Response Status* **C**

ACCEPT.
Editor notes this comment is out of scope for this review

Cl **113** *SC* **113.7.3.2.1** *P* **172** *L* **7** # 201
Moffitt, Bryan CommScope

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

dB is italicised

SuggestedRemedy

un

Response *Response Status* **C**

ACCEPT.
Editor notes this comment is out of scope for this review

Cl **113** *SC* **113.7.4.1** *P* **172** *L* **32** # 203
Moffitt, Bryan CommScope

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

dB is smushed into the equation

SuggestedRemedy

unsmush

Response *Response Status* **C**

ACCEPT.
Editor notes this comment is out of scope for this review

Cl **113** *SC* **113.7.4.1** *P* **172** *L* **39** # 204
Moffitt, Bryan CommScope

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

an extra hanging B and the B<= should be B= since the IL equation already has the inequality. Leaving the second inequality allows zero to be used.

SuggestedRemedy

fix

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.7.4.1** *P* **172** *L* **42** # 205
Moffitt, Bryan CommScope

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

dB suddenly switched to an non-parenthesized version (later as well)

SuggestedRemedy

supersize it

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Replace with "(dB)"
Editor notes this comment is out of scope for this review

Cl **113** *SC* **113.7.4.3.10** *P* **177** *L* **21** # 209
Moffitt, Bryan CommScope

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

not specified

SuggestedRemedy

change "is specified" to "is limited"

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

The differential pair-to-pair alien far-end crosstalk loss between the disturbed duplex channel in a link segment and the disturbing duplex channels in other link segments is specified. Language usage consistent with other BASE-T clauses.

Cl **113** *SC* **113.7.4.3.10** *P* **177** *L* **51** # 210
Moffitt, Bryan CommScope

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

The statement is vague and could apply to either of the 2 equations above

SuggestedRemedy

When equation 113-43 values are greater than 75 dB, they shall revert to 75 dB.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.7.4.3.4** *P* **175** *L* **20** # 206
Moffitt, Bryan CommScope

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

The statement is vague and could apply to either of the 2 equations above

SuggestedRemedy

When equation 113-37 values are greater than 65 dB, they shall revert to 65 dB.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.7.4.3.5** *P* **175** *L* **47** # 184
Donahue, Curtis UNH-IOL

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

The commenter recognizes this text as unchanged/out of scope of this review

Equation is missing (moved to next page for some reason).

Note: Subclause, page, and line references are from CLEAN version of D2.2.

SuggestedRemedy

Show FrameMake who's boss and anchor that equation in the appropriate location.

Response *Response Status* **C**

ACCEPT.

Cl **113** *SC* **113.7.4.3.5** *P* **176** *L* **13** # 207
Moffitt, Bryan CommScope

Comment Type **T** *Comment Status* **A** *Cabling*

Measurement floor specification is missing.

SuggestedRemedy

add: Calculations that result in MDACRF loss values greater than 62 dB shall revert to a requirement of 62 dB minimum.

Response *Response Status* **C**

ACCEPT.
Editor notes this comment is out of scope for this review

Cl **113** *SC* **113.7.4.3.9** *P* **177** *L* **12** # 208
Moffitt, Bryan CommScope

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

The statement is vague and could apply to either of the 2 equations above and why did we switch to "for information only" form?

SuggestedRemedy

When equation 113-41 values are greater than 75 dB, they shall revert to 75 dB.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Use language here and for PSAACRF 172, L2; 177, L50

Cl **113** *SC* **113.7.5** *P* **178** *L* **4** # 211
Moffitt, Bryan CommScope

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

doubled over the description

SuggestedRemedy

Change "and the noise coupled between the link segments referred to as alien crosstalk noise. The remaining noise sources, which are secondary sources, are discussed in the following" to " but other sources can also be significant."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Delete P178 L3 through L6 (beginning of paragraph starting with "The 40GBASE-T noise environment consists of noise…" and ending with "are discussed in the following.")
leaving only the last sentence:
"The 40GBASE-T noise environment consists of the following:"

Cl **113** *SC* **113.8.2.2** *P* **181** *L* **12** # 213
Moffitt, Bryan CommScope

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

cabling standards are specifying 50 ohm common mode

SuggestedRemedy

change to 50

Response *Response Status* **C**

REJECT.
The balance is specified with PHY connected to the MDI as in normal operation which can be different than connecting hardware specified in cabling standards. Alignment with cabling standards is not sufficient information to make suggested change. For committee discussion.

Cl **113A** *SC* **113A.3** *P* **204** *L* **19** # 222

Regev, Alon — Ixia

Comment Type **E** *Comment Status* **A** *Clamp Test*

extra "measured to" in "The clamp should be tested to measured to ensure the insertion loss and return loss are as specified in 113A.2."

SuggestedRemedy

change
"The clamp should be tested to measured to ensure the insertion loss and return loss are as specified in 113A.2."
To
"The clamp should be tested to ensure the insertion loss and return loss are as specified in 113A.2."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See comment 189 for master edit to annex 113A
"The clamp should be measured to ensure the insertion loss and return loss are as specified in 113A.2."

Cl **113A** *SC* **113A.3** *P* **204** *L* **20** # 223

Regev, Alon — Ixia

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

"teh" should be "the"

SuggestedRemedy

change "teh" to "the"

Response *Response Status* **C**

ACCEPT.

Cl **113A** *SC* **113A.3** *P* **204** *L* **20** # 135

Cohen, Larry — Aquantia

Comment Type **E** *Comment Status* **A** *Clamp Test*

Table reference is incorrect

SuggestedRemedy

Change 113A.2 to 113A.1

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See comment 189 for master edit to annex 113A
Change 113A.2 to Table 113A-1
LATE

Cl **113A** *SC* **113A.3** *P* **204** *L* **35** # 136

Cohen, Larry — Aquantia

Comment Type **T** *Comment Status* **A** *Clamp Test*

Clarification on balun specification. Add allowance for separate differential and common-mode component measurement configurations.

SuggestedRemedy

Proposed new (modified) text:

c) Balun-3 ports, laboratory quality with a 100 W balanced differential input (Port 1), a 50 W unbalanced single-ended output for the differential component (Port 2), and a 50 W unbalanced single-ended output for the common-mode component (Port 3):

Insertion Loss (Port 1 <--> Port 2): < 4 dB (80 MHz-2000 MHz)
Return Loss (Port 1, Zref = 100 W): > 15 dB (80 MHz-2000 MHz)
Common-Mode Rejection (Port 1 <--> Port 2): > 45 dB (80 MHz-1000 MHz), > 40dB at 2000 MHz
Common-Mode Return Loss (Port 1, Zref = 25 W): > 8dB (80 MHz-2000 MHz)

Note 1: The use of two separate differential and common-mode signal component measurement configurations is permissible provided the above specifications are met for each measurement configuration

Note 2: The common-mode reference (termination) impedance may be standard specific. The common-mode return loss requirement does not change, but Zref (common-mode) may be 50 W or 75 W for UTP applications.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See comment 189 for master edit to annex 113A
See cibula_3bq_02_0915.pdf slides 15 & 16
LATE

Cl **113A** *SC* **113A.3** *P* **204** *L* **54** # 137
Cohen, Larry Aquantia

Comment Type **T** *Comment Status* **A** *Clamp Test*

Clarification of signal generator specification.

SuggestedRemedy

Proposed new modified text:

h) Signal generator capable of providing a sine wave signal of 80 MHz to 2000 MHz:

Output harmonic distortion: < -40 dBc
Maximum output power (while maintaining harmonic distortion specification: > 13 dBm
RF Envelope rise/fall time (output on/off transitions): 50 usec to 1000 usec

Note 1: The signal generator blocks shown in Figure 113A-3 and Figure 113A-4 may consist of separate signal generator, output power amplifier, and RF envelope modulator modules connected together.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See comment 189 for master edit to annex 113A
See BZ comment 199
LATE

Cl **113A** *SC* **113A.3** *P* **205** *L* **21** # 140
Cohen, Larry Aquantia

Comment Type **T** *Comment Status* **R** *Clamp Test*

Modify text for application of a directional coupler in the clamp validation test setup.

SuggestedRemedy

Proposed new modified text:

With the test cable inserted in the cable clamp, a signal generator with a 50 W output impedance is connected to one end of the cable clamp through an intermediate directional coupler, and a 50 W termination is connected to the other end of the cable clamp. Measurement equipment (with a 50 W input impedance) for verification of the test signal power, harmonic distortion, and envelope rise/fall time is connected to the coupled port of the directional coupler. It is assumed that the coupling loss and mainline loss of the directional coupler have been previously determined by measurement or other means, and these loss factors are used to correct all measurements to their proper value.

Response *Response Status* **C**

REJECT.
See comment 189 for master edit to annex 113A
Consider with CMRR ad hoc report recommendation on directional coupler
(DEFERRED TO BZ)
LATE

Cl **113A** *SC* **113A.3** *P* **205** *L* **24** # 141
Cohen, Larry Aquantia

Comment Type **T** *Comment Status* **R** *Clamp Test*

Modify text to reflect test frequency sweep range.

SuggestedRemedy

Change 1 MHz to 80 MHz

Response *Response Status* **C**

REJECT.
Annex to specify a 1MHz lower frequency, PHY clauses may specify higher if desired.
LATE
See comment 189 for master edit to annex 113A

Cl **113A** *SC* **113A.3** *P* **205** *L* **24** # 176
Donahue, Curtis UNH-IOL

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

The commenter recognizes this text as unchanged/out of scope of this review.

Is the use of "shall" in an informative annex ok? Would "should" be more appropriate?

"shall" also appears on pg 206 line 23.

Note: Subclause, page, and line references are from CLEAN version of D2.2.

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Commenter is correct - shall's should not be in an informative annex.
Editor to search and replace all shalls in Annex 113A with "should"

Cl **113A** *SC* **113A.3** *P* **205** *L* **25** # 142
Cohen, Larry Aquantia

Comment Type **T** *Comment Status* **R** *Clamp Test*

Modify text to reflect test frequency sweep range.

SuggestedRemedy

Change 20 MHz to 100 MHz

Response *Response Status* **C**

REJECT.
See comment 141
LATE
See comment 189 for master edit to annex 113A

Cl **113A** *SC* **113A.3** *P* **205** *L* **26** # 143

Cohen, Larry — Aquantia

Comment Type **T** *Comment Status* **A** *Clamp Test*

Modify text to allow use of an alternate equivalent measurement network configuration in addition to the balun

SuggestedRemedy

Proposed new text:

The cable pairs not connected to the balun (or equivalent measurement network) are terminated in a resistor network.

Response *Response Status* **C**

ACCEPT.
See comment 189 for master edit to annex 113A
See cibula_3bq_02_0915.pdf slide 21
LATE

Cl **113A** *SC* **113A.3** *P* **205** *L* **3** # 138

Cohen, Larry — Aquantia

Comment Type **T** *Comment Status* **R** *Clamp Test*

Add directional coupler between signal generator and clamp as a measurement port for signal power level, harmonic distortion, and envelope rise/fall time at the clamp input

SuggestedRemedy

Proposed new text for directional coupler:

j) Directional coupler

Mainline Insertion Loss: < 2 dB (80 MHz-2000 MHz)
Coupling Loss: < 20 dB (80 MHz-2000 MHz)
Return Loss (Mainline Ports): > 20 dB (80 MHz-2000 MHz)
Return Loss (Coupling Port): > 15 dB (80 MHz-2000 MHz)

k) Receiver

Response *Response Status* **C**

REJECT.
See comment 189 for master edit to annex 113A
See cibula_3bq_02_0915.pdf slide 19
(DEFERRED TO BZ)
LATE

Cl **113A** *SC* **113a.3** *P* **205** *L* **34** # 224

Regev, Alon — Ixia

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

missing space between "from the cable clamp." and "The cable".

SuggestedRemedy

change "from the cable clamp.The cable"
to "from the cable clamp. The cable"

Response *Response Status* **C**

ACCEPT.

Cl **113A** *SC* **113A.3** *P* **205** *L* **38** # 144

Cohen, Larry — Aquantia

Comment Type **T** *Comment Status* **R** *Clamp Test*

Modify text to reflect test frequency sweep range.

SuggestedRemedy

Change 1 MHz to 80 MHz

Response *Response Status* **C**

REJECT.
See comment 189 for master edit to annex 113A
See comment 141
LATE

Cl **113A** *SC* **113A.3** *P* **205** *L* **41** # 145

Cohen, Larry — Aquantia

Comment Type **T** *Comment Status* **R** *Clamp Test*

Modify Table 113A-2 to reflect test frequency sweep range.

SuggestedRemedy

Proposed changes to Table 113A-2:

Eliminate the top two entries (rows) for the validation requirements (frequency ranges of 1 MHz to 30 MHz and 30 MHz to 80 MHz) in Table 113A-2.

Response *Response Status* **C**

REJECT.
See comment 189 for master edit to annex 113A
See comment 141
LATE

Cl **113A** *SC* **113A.3** *P* **205** *L* **6** # 139

Cohen, Larry — Aquantia

Comment Type **T** *Comment Status* **R** *Clamp Test*

Add a directional coupler for use as a measurement port to Figure 113A-3 Cable clamp validation test configuration. This is a better test configuration because there is significant frequency response distortion in the signal path to the other clamp source port when a cable is inserted in the clamp.

SuggestedRemedy

Add a directional coupler beween the signal generator and clamp input as a measurement port to Figure 113A-3 Cable clamp validation test configuration. Connect the signal sensor to the directional coupler port and put a 50 W termination on the other clamp source port. See attached Figure 113A-3 Example.

Important note: Figure 113A-3 Example is not intended to be copied exactly into the standard document. Its main purpose is to show the insertion location for the added directional coupler for modification of the existing figure.

Response *Response Status* **C**

REJECT.
See comment 189 for master edit to annex 113A
Consider with CMRR ad hoc report recommendation on directional coupler
(DEFERRED TO BZ)
LATE

Cl **113A** *SC* **113A.3** *P* **206** *L* **3** # 146

Cohen, Larry — Aquantia

Comment Type **T** *Comment Status* **R** *Clamp Test*

In Note 1, modify the text to reflect test frequency sweep range.

SuggestedRemedy

Proposed new modified text:

The signal generator output should be adjusted to the specified signal power (for example 6 dBm for 40GBASE-T) at 100 MHz on the signal sensor. When the frequency is varied from 80 MHz to 2000 MHz, the measured power should not vary more than ±10%.

Response *Response Status* **C**

REJECT.
See comment 189 for master edit to annex 113A
See comment 141
LATE

Cl **113A** *SC* **113A.3** *P* **206** *L* **4** # 189

Feyh, German — Broadcom Corporation

Comment Type **T** *Comment Status* **A** *Clamp Test*

The cable clamp test is an preliminary test to predict the behavior in the electro-magnetic chamber test. Most industry practioners agree the test suffers from being highly variable in e.g. the exact positioning of the cable in the clamp, the position of the ferrites and the distance of the clamp to MDI. A signal power calibration to 10% aggravates the situation by boosting signal power in regions of varying transfer function. While giving the impression of higher repeatability, for setups that are comparing test results for a longer period of time calibration will result in unpredictable test outcomes.

SuggestedRemedy

Remove text:
"When the frequency is varied from 1 MHz to 2000 MHz, the measured
power should not vary more than ±10 %. If the measured power varies more than ±10%, then a correction factor must be applied at each measurement frequency."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
MASTER COMMENT FOR CLAMP TEST
Incorporate edits to Annex 113A shown in cibula_3bq_03_0915.pdf

Cl **113A** *SC* **113A.4** *P* **206** *L* **24** # 147

Cohen, Larry — Aquantia

Comment Type **T** *Comment Status* **R** *Clamp Test*

Modify text to reflect test frequency sweep range.

SuggestedRemedy

Change 1 MHz to 80 MHz.

Response *Response Status* **C**

REJECT.
See comment 189 for master edit to annex 113A
See comment 141
LATE

Cl **113A** *SC* **113A.4** *P* **206** *L* **28** # 148

Cohen, Larry Aquantia

Comment Type **T** *Comment Status* **A** *Clamp Test*

Add text defining the frequency test sweep increment, the dwell time at each frequency, and the carrier envelope rise/fall time at each frequency point in the equipment test procedure.

SuggestedRemedy

Proposed added new text after line 26:

The signal generator output frequency is swept incrementally from 80 MHz to 2000 MHz with a step size that should not exceed 1% of the preceding frequency value while using the signal level during the validation process. In any case, the frequency sweep shall use the same frequency point set used during the validation process. During the transition to the next frequency point, the signal generator output shall be off. When the transition is complete, the carrier envelope shall rise to its prescribed amplitude in no less than 50 usec but no more than 1.0 msec. Before the next frequency transition, the carrier enveloope shall fall to zero amplitude in no less than 50 usec but no more than 1.0 msec. The dwell time at each frequency shall not be less than the time necessary for the EUT to be exercised and to respond, but shall in no case be less than 0.5 seconds.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
See comment 189 for master edit to annex 113A
DEFERRED - freq range from 1 MHz up, need to work on dwell time spec and where to put.
LATE

Cl **113A** *SC* **113A.4** *P* **206** *L* **29** # 149

Cohen, Larry Aquantia

Comment Type **T** *Comment Status* **R** *Clamp Test*

Add a directional coupler for use as a measurement port to Figure 113A-4 Cable clamp test configuration. This is a better test configuration because there is significant frequency response distortion in the signal path to the other clamp source port when a cable is inserted in the clamp.

SuggestedRemedy

Add a directional coupler beween the signal generator and clamp input as a measurement port to Figure 113A-4 Cable clamp test configuration. Connect the signal sensor to the directional coupler port and put a 50 W termination on the other clamp source port. See attached Figure 113A-4 Example.

Important note: Figure 113A-4 Example is not intended to be copied exactly into the standard document. Its main purpose is to show the insertion location for the added directional coupler for modification of the existing figure.

Response *Response Status* **C**

REJECT.
See comment 189 for master edit to annex 113A
See cibula_3bq_02_0915.pdf slide 20
(DEFERRED TO BZ)

LATE

Cl **30** *SC* **30.2.5** *P* **27** *L* **6** # 170

Law, David HP

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

Suggest that only the table header, with the changed column header, be shown, and unchanged rows should not.

SuggestedRemedy

[1] Change the editing instructions from '... in Table 30-1e as follows:' to read '... in Table 30-1e as follows (unchanged lines not shown):'

[2] Delete all unchanged Table 30-1e rows from draft.

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.2.1.2** *P* **29** *L* **46** # 168

Law, David HP

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

The editing instruction should appear under the subclause heading of the subclause they apply to, not above (see pdf page 57 and 58 of 2014 IEEE-SA Standards Style Manual). This seems to have been followed throughout the draft, except in the case of the Clause 30 changes and some Clause 45 chnages.

SuggestedRemedy

Ensure editing instruction are under the subclause heading of the subclause they apply to.

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.2.1.2** *P* **29** *L* **48** # 164

Law, David HP

Comment Type **T** *Comment Status* **A** *Format*

The IEEE P802.3bw and IEEE P802.3by amendment drafts, which are likely to publish before this amendment draft, as well as IEEE P802.3bp and IEEE P802.3bn amendment drafts, are all modifying a number of the subclause within Clause 30 which this draft is also modifying. This should be noted in the editing instructions in cases where the subclause being edited has already been edited by an earlier amendment. In such case an editor's note also be added stating that the editing instruction need to be updated once the publication order of the various amendments becomes settled.

In addition suggest that only the text being inserted by this draft should be shown so that the remaining text doesn't have to be updated due to the changes in the other drafts that are approved before IEEE P802.3bq, and so there is no risk of this draft inadvertently undoing a previous change.

SuggestedRemedy

[1] Replace the current subclause 30.3.2.1.2 text with:

30.3.2.1.2 aPhyType

Insert the following new entry in "APPROPRIATE SYNTAX" (as modified by IEEE Std 802.3bw-201X, IEEE Std 802.3by-201X and TBD) after the entry for "40GBASE-R":

40GBASE-T Clause 113 40 Gb/s DSQ128

Editor's Note (to be removed prior to publication): The editing instruction need to be updated once the publication order of the various amendments becomes settled.

[2] Replace the current subclause 30.3.2.1.3 text with:

30.3.2.1.3 aPhyTypeList

Insert the following new entry in "APPROPRIATE SYNTAX" (as modified by IEEE Std 802.3bw-201X, IEEE Std 802.3by-201X and TBD) after the entry for "40GBASE-R":

40GBASE-T Clause 113 40 Gb/s DSQ128

Editor's Note (to be removed prior to publication): The editing instruction need to be updated once the publication order of the various amendments becomes settled.

[3] Replace the current subclause 30.6.1.1.5 text with:

30.6.1.1.5 aAutoNegLocalTechnologyAbility

Insert the following new entry in "APPROPRIATE SYNTAX" (as modified by IEEE Std 802.3bw-201X, IEEE Std 802.3by-201X and TBD) after the entry for "40GBASE-CR4":

40GBASE-T 40GBASE-T as specified in Clause 113

Editor's Note (to be removed prior to publication): The editing instruction need to be updated once the publication order of the various amendments becomes settled.

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.2.1.3** *P* **31** *L* **6** # 187

Donahue, Curtis UNH-IOL

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

The commenter recognizes this text as unchanged/out of scope of this review

Add a space between "Clause 73" and "Auto-Negotiation". Also, remove ";" on line 11.

Note: Subclause, page, and line references are from CLEAN version of D2.2.

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.5.1.1.19** *P* **31** *L* **20** # 167

Law, David HP

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

In the changes to subclause 30.5.1.1.19 'aSNROpMarginChnlA' through 30.5.1.1.22 'aSNROpMarginChnlD' the terminology '10G or 40GBASE-T' is used however in the change to subclause 30.5.1.1.24 'aLDFastRetrainCount' and subclause 30.5.1.1.25 'aLPFastRetrainCount' the terminology '10/40GBASE-T' is used.

SuggestedRemedy

Suggest that the terminology '10GBASE-T or 40GBASE-T' be used in all six cases, hence:

In subclause 30.5.1.1.19 'aSNROpMarginChnlA' through 30.5.1.1.22 'aSNROpMarginChnlD' change the text '... for the 10G or 40GBASE-T PMA.' to read '... for the 10GBASE-T or 40GBASE-T PMA.'.
In subclause 30.5.1.1.24 'aLDFastRetrainCount' and subclause 30.5.1.1.25 'aLPFastRetrainCount' change the text '... number of 10/40GBASE-T fast retrains ...' to read '... number of 10GBASE-T or 40GBASE-T fast retrains ...'.

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.5.1.1.2** *P* **31** *L* **18** # 166

Law, David HP

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

An entry in "APPROPRIATE SYNTAX" list for subclause 30.5.1.1.2 'aMAUType' should be added for 40GBASE-T.

SuggestedRemedy

Insert the following change for subclause 30.5.1.1.2:

30.5.1.1.2 aMAUType

Insert the following new entry in "APPROPRIATE SYNTAX" (as modified by IEEE Std 802.3bw-201X, IEEE Std 802.3by-201X and TBD) after the entry for "40GBASE-FR":

Editor's Note (to be removed prior to publication): The editing instruction need to be updated once the publication order of the various amendments becomes settled.

40GBASE-T Four-pair twisted-pair balanced copper cabling PHY as specified in Clause 113

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.5.1.1.24** *P* **32** *L* **24** # 169

Law, David HP

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

Rather than just listing a cross-reference to the subclause where the register can be found to support this attribute, suggest that the behaviour be updated to follow the more usual format (see subclause 30.5.1.1.22 'aSNROpMarginChnlD' above for an example).

SuggestedRemedy

[1] Change the subclause 30.5.1.1.24 'aLDFastRetrainCount' editing instructions to read 'Change 30.5.1.1.24 aLDFastRetrainCount as follows:'.

[2] In subclause 30.5.1.1.24 'aLDFastRetrainCount' change the text '... PHY event counter (see 45.2.1.79.2, 55.4.5.1, and 113.4.5.4).' to read '... PHY event counter (55.4.5.1 and 113.4.5.4). If a Clause 45 MDIO Interface to the PMA/PMD is present, then this attribute maps to the LD fast retrain count register (see 45.2.1.79.2).;

[3] Change the subclause 30.5.1.1.25 'aLPFastRetrainCount' editing instructions to read 'Change 30.5.1.1.25 aLPFastRetrainCount as follows:'.

[4] In subclause 30.5.1.1.25 'aLPFastRetrainCount' change the text '... PHY event counter (see 45.2.1.79.1, 55.4.5.1, and 113.4.5.4).;' to read '... PHY event counter (see 55.4.5.1, and 113.4.5.4.). If a Clause 45 MDIO Interface to the PMA/PMD is present, then this attribute maps to the LP fast retrain count register (see 45.2.1.79.1).;

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.5.1.1.4** *P* **31** *L* **18** # 174

Law, David HP

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

IEEE Std 802.3 subclause 30.5.1.1.4 'aMediaAvailable' states that 'For 40 Gb/s and 100 Gb/s the enumerations map to value of the link_fault variable (see 81.3.4) within the Link Fault Signaling state diagram (see 81.3.4.1 and Figure 46-11) as follows: the value OK maps to the enumeration "available", the value Local Fault maps to the enumeration "not available" and the value Remote Fault maps to the enumeration "remote fault."'. IEEE P802.3bq however changes subclause 81.3.4.1 'Variables and counters' to add a new value for the 'link_fault' called 'Link Interruption' (see page 64, line 53). Based on this, an additional enumeration mapping needs to be added to subclause 30.5.1.1.4 'aMediaAvailable' by IEEE P802.3bq to support 'Link Interruption'. Since 'Link Interruption' seems to operate in the same way as being in, and during exit of, EEE LPI, I suggest 'Link Interruption' maps to the enumeration 'available'.

SuggestedRemedy

Insert the following change for subclause 30.5.1.1.4:

30.5.1.1.4 aMediaAvailable

Change the sixth paragraph of "BEHAVIOUR DEFINED AS" (as modified by IEEE Std 802.3bw-201X, IEEE Std 802.3by-201X and TBD) as follows:

Editor's Note (to be removed prior to publication): The editing instruction need to be updated once the publication order of the various amendments becomes settled.

For 40 Gb/s and 100 Gb/s the enumerations map to value of the link_fault variable (see 81.3.4) within the Link Fault Signaling state diagram (see 81.3.4.1 and Figure 46-11) as follows: the value OK <underscore>and Link Interruption </underscore>map<strikeout>s</strikeout> to the enumeration "available", the value Local Fault maps to the enumeration "not available" and the value Remote Fault maps to the enumeration "remote fault."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Implement proposed resolution and additionally, add editor's note to state this clause is modified by 802.3by and edit is on text 'as modified by 802.3by'

Cl **31B** *SC* **31B.3.7** *P* **0** *L* **0** # 216

Brown, Matthew APM

Comment Type **TR** *Comment Status* **R** *Architecture*

P802.3bx D3.2 Annex 31B.3.7 provides pause turnaround times for each rate class of PHY from the MDI through the to MAC and MAC Control and back to the MDI. In particular, for 10G it provides two pause turnaround time specifications: one for 10GBASE-T PHYs and one for all other PHYs.

Since the 40GBASE-T PMA/PMD delay is considerably longer than for any other currently specified 40G PHY, a similar pause turnaround specification for 40GBASE-T (different from all other PHYs) is required.

SuggestedRemedy

Import Annex 31B into P802.3bq for editing.

Change the following paragraph (P802.3by D3.2 page 743 line 1) from:
"At operating speeds of 40 Gb/s, a station shall not begin to transmit a (new) frame more than 118 pause_quanta after the reception of a valid PAUSE frame that contains a non-zero value of pause_time, as measured at the MDI."
To:
"At operating speeds of 40 Gb/s, a station with a 40GBASE-T PHY shall not begin to transmit a (new) frame more than <xxx> pause_quanta after the reception of a valid PAUSE frame that contains a non-zero value of pause_time, as measured at the MDI. A station using any other PHY shall not begin to transmit a (new) frame more than 118 pause_quanta after the reception of a valid PAUSE frame that contains a non-zero value of pause_time, as measured at the MDI."

The value xxx should be determined taking into consideration both the PMA/PMD delay and the extra delay of PCS sublayers required for an XLAUI sublayer between the MAC device and the PMA/PMD device.

Response *Response Status* **W**

REJECT.
For 10GBASE-T, Annex 31B needed to be modified because the PHY delay 25600BT (50 pause quanta) was a big enough portion of the specified turn around time that it needed to be especially accomodated. This is no longer true for 40GBASE-T, where the PHY delay is still 50 pause quanta, less than the optional 40GBASE-CR4 (8 pause quanta)+40GBASE-R FEC(48 pause quanta) = 56, which is enabled by allowing 118 pause_quanta for turn around.

(also, see comment 215)

Cl **45** *SC* **45.2.1** *P* **36** *L* **9** # 219

Regev, Alon Ixia

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

In editorial instructions, "through" is misspelled as "though".

SuggestedRemedy

change "1.145 though 1.146" to "1.145 through 1.146"

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.1.6** *P* **35** *L* **45** # 165

Law, David HP

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

The editing instructions for subclause 45.2.1.6 'PMA/PMD control 2 register (Register 1.7)' state that 'unchanged rows not shown', yet Table 45-7 'PMA/PMD control 2 register bit definitions' show the unchanged rows.

Further, the changes made by the IEEE P802.3bw and IEEE P802.3by amendment drafts, which are likely to publish before this draft, are not shown, and the IEEE P802.3bp and IEEE P802.3bn amendment drafts are also modifying this register.

SuggestedRemedy

[1] Remove the unchanged rows from Table 45-7.

[2] Change the editing instructions to read 'Change the indicated line, and insert the new line immediately after, in the 1.7.5:0 row of Table 45-7 (as modified by IEEE Std 802.3bw-201X, IEEE Std 802.3by-201X and TBD), as follows (unchanged lines not shown):'

[3] Add an editor's note that reads 'Editor's Note (to be removed prior to publication): The editing instruction need to be updated once the publication order of the various amendments becomes settled.

Response *Response Status* **C**

ACCEPT.

Cl **45** SC **45.2.1.74** P **40** L **19** # 235

Zimmerman, George — CME Consulting

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

45.2.1.74
45.2.1.75
45.2.1.76
45.2.1.77
These sections refers to section 55.4.3.1 and 55.4.6.1.
needs update to include clause 113 references

SuggestedRemedy

Add these subclauses to the amendment with editing instruction to change text, inserting clause 113 references as needed.

Response *Response Status* **C**

ACCEPT.

Cl **45** SC **45.2.1.78** P **40** L **23** # 125

Lo, William — Marvell Semiconductor

Comment Type **TR** *Comment Status* **A** *Management*

P8023bx_D3p2_SECTION4.pdf page 114 line 22
mentions 1.25ns resolution and 2.5 ns accuracy.
This presumes 1.25ns symbol time in 10GBASE-T.
Need to adjust this for 0.3125ns for 40GBASE-T

SuggestedRemedy

Add text to differentiate
1.25 ns resolution 2.5ns accuracy for 10GBASE-T
0.3125 ns resolution 0.625 ns accuracy for 40GBASE-T

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
Make change scalable with symbol period:
Add edit to change text of 45.2.1.78 as follows:

From: It is reported with 1.25 ns resolution to an accuracy of 2.5 ns.

To: It is reported with resolution equal to one symbol period (see 55.1.3 and 113.1.2) of the PHY (e.g. 1.25ns for 10GBASE-T) to an accuracy of two symbol periods (e.g., 2.5ns for 10GBASE-T).

From: If the delay exceed the maximum amount that can be represented by the range (–80 ns to +78.75 ns), the field displays the maximum respective value.

To: If the delay exceeds the maximum amount that can be represented by the range (-64 symbols to +63 symbols), the field displays the maximum respective value.

Cl **45** SC **45.2.3.14** P **45** L **12** # 225

Regev, Alon — Ixia

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

"MultiGBASE-T PCS status 2 register is shown in Table ." should be
"MultiGBASE-T PCS status 2 register is shown in Table 45-129."

SuggestedRemedy

Change
"MultiGBASE-T PCS status 2 register is shown in Table ."
To
"MultiGBASE-T PCS status 2 register is shown in Table 45-129."

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.9.4a** *P* **43** *L* **21** # 188

Donahue, Curtis UNH-IOL

Comment Type **E** *Comment Status* **D** *PICS*

The commenter recognizes this text as unchanged/out of scope of this review

"shall" missing a PICS.

Note: Subclause, page, and line references are from CLEAN version of D2.2.

SuggestedRemedy

Add appropriate PICS.

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **45** *SC* **45.2.7.11.9** *P* **50** *L* **45** # 126

Lo, William Marvell Semiconductor

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

Add a clarifying sentence since fast retrain ability is not advertised during auto-neg.

SuggestedRemedy

Add following at end of paragraph.

This bit is valid only after link is established.

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.7.13** *P* **51** *L* **1** # 127

Lo, William Marvell Semiconductor

Comment Type **TR** *Comment Status* **A** *Management*

40GBASE-T EEE ability is not advertised via the Extended next page
It is exchanged via the InfoField

SuggestedRemedy

Delete the following:
or the 40GBASE-T Extended Next Page as defined in 113.6.1
and change to:
. For 40GBASE-T the EEE advertisement is exchanged in the InfoField during training as defined in 113.4.2.5.10

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.
change to:
For 25GBASE-T and 40GBASE-T the EEE advertisement is exchanged in the InfoField during training as defined in 113.4.2.5.10

Cl **45** *SC* **45.2.7.13.4a** *P* **51** *L* **24** # 128

Lo, William Marvell Semiconductor

Comment Type **T** *Comment Status* **R** *Training*

Clarify the the EEE bit is exchanged via InfoField and not wia extended next page

SuggestedRemedy

Delete current paragraph and replace with:
Bit 7.60.9 is used to select whether or not the 40GBASE-T PHY advertises the ability to support EEE. EEE ability is exchanged during link training, see 126.4.2.5.10. If bit 7.60.9 is set to one, the PHY shall advertise EEE ability. If bit 7.60.9 is set to zero, the PHY shall not advertise EEE ability.

Response *Response Status* **C**

REJECT.
Text is consistent with other 802.3 Cl 45 EEE advertisements, and since it is control, when the bit is exchanged does not effect its validity.

Cl **45** *SC* **45.2.7.14** *P* **52** *L* # 129

Lo, William — Marvell Semiconductor

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

P8023_D3p2_SECTION4.pdf page 259 line 45 to page 260 line 1
mentions the EEE LP bits are updated after Auto-Neg completed.
This is not true for 40GBASE-T.

SuggestedRemedy

Add the following sentence after the paragraph to clarify:
In 40GBASE-T the EEE ability is exchanged in the InfoField during link training. The 40GBASE-T EEE LP ability register is updated after link is eatablished.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Add the following sentence after the paragraph:
Except for 10GBASE-T, members of the MultiGBASE-T PHY set exchange the EEE ability in the InfoField during link training. For these PHYs, the EEE LP ability register is updated after link is established.

Cl **45** *SC* **45.2.7.x** *P* **46** *L* # 130

Lo, William — Marvell Semiconductor

Comment Type **TR** *Comment Status* **A** *Management*

The THP Bypass Request in PMA_Coeff_Exchstate bit is defined in 113.4.2.5.10 but there are no registers defined to exchange this.

SuggestedRemedy

Page 46 lines 45, 46 Table 45-200
Change "MultiGBASE-T AN control" to "MultiGBASE-T AN control 1"
Change "MultiGBASE-T AN status" to "MultiGBASE-T AN status 1"
Add 7.64, MultiGBASE-T AN control 2, subclause 45.2.7.14a
Add 7.65, MultiGBASE-T AN status 2, subclause 45.2.7.14b

Also apply the heading changes above to 45.2.7.10 and 45.2.7.11 and the table headings in the section

Add section
45.2.7.14a MultiGBASE-T AN control 2 (Register 7.64)
Register 7.64 is a continuation of register 7.32.

Add a table
7.64.0 40GBASE-T THP Bypass Request
0 = Local device requests link partner not to reset THP during fast retrain
1 = Local device requests link partner to initially reset THP during fast retrain
R/W

Add a section
45.2.7.14a.1 40GBASE-T THP Bypass Request
Bit 7.64.0 is valid only if 7.32.3 is set to one advertising fast retrain ability, and is used to request the link partner whether to initially reset the THP during fast retrain. THP Bypass Request is exchanged during link training, see 113.4.2.5.10. If bit 7.64.0 is set to zero the local device requests link partner not to reset THP during fast retrain. If bit 7.64.0 is set to one the local device requests link partner to initially reset THP during fast retrain.

Add section
45.2.7.14b MultiGBASE-T AN control 2 (Register 7.65)
Register 7.65 is a continuation of register 7.33.

Add a table
7.65.0 40GBASE-T Link Partner THP Bypass Request
0 = Link partner requests local device not to reset THP during fast retrain
1 = Link Partner requests local device to initially reset THP during fast retrain
RO

Add a section
45.2.7.14b.1 40GBASE-T Link Partner THP Bypass Request

Bit 7.65.0 is valid only if 7.33.0 is set to one indicating that the link partner has fast retrain ability.
When read as a zero, the link partner requests local device not to reset THP during fast retrain.
When read as a one, the link Partner requests local device to initially reset THP during fast retrain.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Allocate bits for THP bypass request as described in zimmerman_3bq_03_0915.pdf
Editorial license to implement register bit map in zimmerman_3bq_03_0915.pdf if conflicts exist with detailed instructions.

Cl **55** *SC* **55.3.5.3** *P* **56** *L* **44** # 218

Regev, Alon Ixia

Comment Type **E** *Comment Status* **R** *EZ*

"signaling" misspelled as "signalling" (in multiple places in the draft).

SuggestedRemedy

change "signalling"
to "signaling"

Response *Response Status* **C**

REJECT.
Signaling is a correct alternative spelling and is used throughout the draft of 802.3 d3p2.
Signalling is not used in 802.3 d3p2 (at least in sections 4 & 6)

Cl **78** *SC* **78.3** *P* **59** *L* # 131

Lo, William Marvell Semiconductor

Comment Type **TR** *Comment Status* **A** *Autoneg*

P8023_D3p2_SECTION6.pdf page 40 line starting in line 26 makes a blanket statement about EEE capabilities being exchanged during Auto-Negotiation.
This is not true for 40GBASE-T

SuggestedRemedy

Change line 26 from
The EEE capability shall be advertised....
to
With the exception of 40GBASE-T the EEE capability shall be advertised....

Add to the end of the first paragraph:
The EEE capability for 40GBASE-T shall be advertised during link training according to clause 126.4.2.5.10.

Add to the end of the second paragraph:
The same applies to 40GBASE-T except the EEE capabilities are exchanged and resolved during link training instead of during Auto-Negotiation

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
(Note - 802.3bz and bp will face this same issue)
Change line 26 from
The EEE capability shall be advertised….
To
The EEE capability shall be advertised during the Auto-Negotiation stage, except for PHYs that only support fast wake operation or PHYs that exchange EEE capability during link training.

Add to the end of the first paragraph:
The EEE capability for 25GBASE-T and 40GBASE-T shall be advertised during link training according to clause 126.4.2.5.10.

Add to the end of the second paragraph:
The same applies to 25GBASE-T and 40GBASE-T except the EEE capabilities are exchanged and resolved during link training instead of during Auto-Negotiation

Cl **81** *SC* **81.1.7.3** *P* **63** *L* **42** # 175

Law, David HP

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

To cover all the cases of the two options being supported ot not, suggest that first two sentences of the second paragraph of 81.1.7.3 be changed to read 'CARRIER_STATUS is set to CARRIER_ON if the optional EEE capability is supported and LPI_CARRIER_STATUS is TRUE, or if optional detection of Link Interruption is supported and link_fault is Link Interruption (see 81.3.4.1). CARRIER_STATUS is set to CARRIER_OFF if, the optional EEE capability is not supported or LPI_CARRIER_STATUS is FALSE, and, if optional detection of Link Interruption is supported or link_fault is not Link Interruption.'.

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT.

Cl **81** *SC* **81.1.7.3** *P* **63** *L* **42** # 171

Law, David HP

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

It seems odd to state that 'The RS never generates this primitive ...' but to then state there are two cases where it does, when EEE or Link Interruption is supported.

SuggestedRemedy

The RS only generates this primitive when optional EEE capability or the optional detection of Link Interruption is supported.

Response *Response Status* **C**

ACCEPT.

Cl **81** *SC* **81.5.3.7** *P* **66** *L* **13** # 172

Law, David HP

Comment Type **E** *Comment Status* **A** *PICS*

The support field for a option items shoudl read 'Yes[ ] No [ ]'.

SuggestedRemedy

Change 'N/A [ ]' to read 'No [ ]'.

Response *Response Status* **C**

ACCEPT.

Cl **81** *SC* **81.5.3.7** *P* **66** *L* **14** # 173

Law, David HP

Comment Type **E** *Comment Status* **A** *PICS*

If this PICS item is predicated on implementation of PICS item 'LINT1', and when 'LINT1' is implemented this item is required, which I believe is the case, the status field should read 'LINT1:M'.

SuggestedRemedy

Change 'LINT:O' to read 'LINT1:M'.

Response *Response Status* **C**

ACCEPT.

Cl **99** *SC* **Introduction** *P* **12** *L* **19** # 150

Amason, Dale Freescale

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

Text incomplete: "This amendment includes changes to IEEE Std 802.3-20XX and adds Clause 113, and ."

SuggestedRemedy

Combine two sentences into one:

This amendment includes changes to IEEE Std 802.3-20XX and adds a new Physical Layer for 40 Gb/s operation over balanced twisted-pair structured cabling systems.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Insert "Annex 113A" after "and".
(following sentence is customary to describe the technical content of the standard)