Cl **FM** *SC* **FM** *P* **1** *L* **26** # 1
Anslow, Pete Ciena

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

IEEE Std 802.3cd-2018 is now approved

SuggestedRemedy

Change "IEEE Std 802.3cd-201x" to "IEEE Std 802.3cd-2018"

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **2** *L* **3** # 2
Anslow, Pete Ciena

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

The abstract should not contain "Draft D1.1 is prepared for Task Force Review."

SuggestedRemedy

Delete "Draft D1.1 is prepared for Task Force Review."

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **21** *L* **1** # 3
Anslow, Pete Ciena

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

"2019Draft Standard for Ethernet" contains a spurious "2019"

SuggestedRemedy

Delete "2019"

Proposed Response *Response Status* **O**

Cl **44** *SC* **44.1.3** *P* **28** *L* **3** # 4
Anslow, Pete Ciena

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

Item d of 44.1.3 contains five external cross-references that are not in forest green

SuggestedRemedy

Apply character tag "External" to "Clause 53", "Clause 54", "Clause 55", "Clause 68", and "Clause 52"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.18.aa** *P* **32** *L* **33** # 5
Anslow, Pete Ciena

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

In the editing instruction "before 45.2.1.18a (added by IEEE Std 802.3cb-2018)" the reference "45.2.1.18a" should be "45.2.1.18.a"

SuggestedRemedy

In the editing instruction, change "45.2.1.18a" to "45.2.1.18.a"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.192.4** *P* **35** *L* **25** # 6
Anslow, Pete Ciena

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

Comment #16 against D1.0 was:
In the heading of 45.2.1.192.4, "(1.2309.14)" should be "(1.2309.10:9)"
The response was:
ACCEPT IN PRINCIPLE.
This is covered by Comment #85.
but comment #85 made no change to the draft.

SuggestedRemedy

In the heading of 45.2.1.192.4, change "(1.2309.14)" to "(1.2309.10:9)"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45..2.3** *P* **40** *L* **23** # 7
Anslow, Pete Ciena

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

Part of the suggested remedy for Comment #27 against D1.0 was:
In the editing instruction, change: "1.2318 - 1.2320" to: "1.2318 to 1.2324"
The response was:
ACCEPT
but the text in the editing instruction is "1.2318 to 1.2320" where the second number is still incorrect.

SuggestedRemedy

In the editing instruction, change: "1.2318 to 1.2320" to: "1.2318 to 1.2324"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.72.5** *P* **42** *L* **15** # 8
Anslow, Pete Ciena

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

In the second line of text "8 octet" has been changed to "8-octet".
However, the text in the base standard is "8 octet".
If it is intended that this amendment changes "8 octet" to "8-octet" then this has to be shown with strikethrough and underline font, preferably with "8 octet" in strikethrough and "8-octet" in underline for clarity.

SuggestedRemedy

If it is intended that this amendment changes "8 octet" to "8-octet" then this has to be shown with strikethrough and underline font, preferably with "8 octet" in strikethrough and "8-octet" in underline for clarity.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.74** *P* **43** *L* **12** # 9
Anslow, Pete Ciena

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

In the "Description" for bit 3.2313.15, "This bit shall self clear when register 3.2317 is read." has been changed to "See 45.2.3.74.1 for self-clearing behavior".
However, this is text in the base standard being changed via a "Change" editing instruction so this change has to be shown with strikethrough and underline font.

SuggestedRemedy

In the "Description" for bit 3.2313.15:
show "This bit shall self clear when register 3.2317 is read." in strikethrough font.
and show "See 45.2.3.74.1 for self-clearing behavior." in underline font. Note the addition of "." at the end of this.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.75** *P* **44** *L* **3** # 10
Anslow, Pete Ciena

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

While the addition of the hyphen in "8-octet" is shown with underline, the removal of the space is not shown with strikethrough.

SuggestedRemedy

Show "8 octet" in strikethrough and "8-octet" in underline for clarity.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.78.1** *P* **46** *L* **1** # 11
Anslow, Pete Ciena

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

Extra ")" at the end of "45.2.3.78.1 PCS reset (3.2322.15))"

SuggestedRemedy

Delete the extra ")"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.9.2.7** *P* **49** *L* **51** # 12
Anslow, Pete Ciena

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

As noted in Comment #38 against D1.0, space missing before "(" in the editing instruction.

SuggestedRemedy

Add the space.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.9.3.2** *P* **50** *L* **30** # 13
Anslow, Pete Ciena

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

As noted in Comment #39 against D1.0, space missing before "(" in the editing instruction.

SuggestedRemedy

Add the space.

Proposed Response *Response Status* **O**

Cl **104** *SC* **104.7.2.4** *P* **60** *L* **1** # 14
Anslow, Pete Ciena

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

The heading for Table 104-9 has a grey background.

SuggestedRemedy

Make it white.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.2** *P* **73** *L* **5** # 15

Anslow, Pete Ciena

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

"Clause 98.4" should be just "98.4"

SuggestedRemedy

Change "Clause 98.4" to "98.4"

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.2.15** *P* **90** *L* **39** # 16

Anslow, Pete Ciena

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

Equation (149-1) is truncated
Is this a "Medium" equation?

SuggestedRemedy

If it is not already, make this a "Medium" equation.
"Shrink-wrap" the equation.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.3.3** *P* **98** *L* **24** # 17

Anslow, Pete Ciena

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

Two instances of "Table 149–1" (in b) and c)) should be cross-references.

SuggestedRemedy

Make the two instances of "Table 149–1" cross-references.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.4** *P* **136** *L* **13** # 18

Anslow, Pete Ciena

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

In the third paragraph of 149.4.2.4, "149.4.2.4.2" and "149.4.2.4.8" should be cross-references and "FFigure 149–27" has a spurious extra "F"

SuggestedRemedy

Make "149.4.2.4.2" and "149.4.2.4.8" cross-references and delete the spurious "F" in "FFigure 149–27".

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.3.1** *P* **146** *L* **27** # 19

Anslow, Pete Ciena

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

In "{–1, -1/3, 1/3, 1}" the hyphen should be an en dash

SuggestedRemedy

In "{–1, -1/3, 1/3, 1}" change the hyphen to an en dash

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.9.1** *P* **164** *L* **5** # 20

Anslow, Pete Ciena

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

This now says "shall conform to IEC 62368–1 (former IEC 60950–1)".
This would be ok if IEC 60950–1 had simply been re-numbered to become IEC 62368–1, but I do not believe that this is the case. I believe that these are different standards with different contents, in which case this text is inappropriate.

SuggestedRemedy

Delete "(former IEC 60950–1)"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **2** *L* **5** # 21
Maguire, Valere The Siemon Company

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

Incorrect capitalization

SuggestedRemedy

Replace "physical layer" with "Physical Layer"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **2** *L* **5** # 22
Maguire, Valere The Siemon Company

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

MASTER-SLAVE could be added to the keywords

SuggestedRemedy

Insert " MASTER-SLAVE;" after "IEEE 802.3chTM; "

Proposed Response *Response Status* **O**

Cl **44** *SC* **44.1.3** *P* **27** *L* **3** # 23
Maguire, Valere The Siemon Company

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

Correct grammatical of the word "which"

SuggestedRemedy

Insert a comma after the last word coming before "which" in these locations: page 27 - line 3, page 35 - line 31, page 61 - line 8, page 69 - line 37, page 70 - line 2, page 80 - line 5, and page 90 - line 51.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.6.2.2** *P* **102** *L* **49** # 24
Maguire, Valere The Siemon Company

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

Consistency with other text in clause

SuggestedRemedy

Replace "which" with "that"

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.2.11** *P* **89** *L* **37** # 25
Maguire, Valere The Siemon Company

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

Correct grammatical of the word "which"

SuggestedRemedy

Replace "(which is reserved)" with ", which is reserved"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **1** *L* **25** # 26
Maguire, Valere The Siemon Company

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

IEEE Std 802.3cd-201x has published.

SuggestedRemedy

Replace all occurances of "IEEE Std 802.3cd-201x" with "IEEE Std 802.3cd-2018"

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.1.3.4** *P* **70** *L* **11** # 27

Benyamin, Saied Aquantia

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

We are using link synchronization as Alert, add a paragraph to end of the link synchronization description to mention this

SuggestedRemedy

Add the following paragraph:
When EEE is active, the same link synchronization pattern is used as an alert sequence.
When rx_lpi_active is true, the send_s_sigdet variable which detects the SEND_S pattern is used as alert detect.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.2.21** *P* **96** *L* **46** # 28

Benyamin, Saied Aquantia

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

Alert description is yellowed out, and needs to mention that we use link sycnrhonization.
Current paragraph:
When the lpi_tx_mode variable takes the value <TBD: ALERT and the PMA asserts SEND_N, the PCS passes the ALERT vector to the PMA.>

SuggestedRemedy

When the lpi_tx_mode variable takes the value ALERT, the PMA transmits the link synchronization sequence onto the MDI as provided by the link synchronization block via sync_tx_symb

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.2.21** *P* **96** *L* **51** # 29

Benyamin, Saied Aquantia

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

Alert has a yellow tag around it <TBD Alert>

SuggestedRemedy

remove yellow and <TBD> and change to upper case ALERT

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.2.21** *P* **97** *L* **4** # 30

Benyamin, Saied Aquantia

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

There is a yellow tag on this line awaiting some description

SuggestedRemedy

Please add the following:
After the alert signal, the PCS completes the transition from LPI mode to normal mode by sending a wake signal containing lpi_wake_time RS-FEC frames composed of IDLE 64B/65B blocks.

Lpi_wake_time is a fixed parameter that is defined in Table 149-1000. Please see attached word doc

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.3** *P* **98** *L* **2** # 31

Benyamin, Saied Aquantia

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

There is a yellow TBD as follows
The quiet-refresh cycle continues until the PMA asserts <TBD Alert> .

SuggestedRemedy

The quiet-refresh cycle continues until the link synchronization detect asserts send_s_sigdet to indicate that the alert (link synchronization) sequence has been reliably detected. After the alert sequence the link partner transmits repeated /I/ characters, representing a wake signal. The PHY receive function sends /I/ to the XGMII for 8 RS-Frame periods (wake duration) and then resumes normal operation.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.5** *P* **100** *L* **34** # 32
Benyamin, Saied Aquantia

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

We space alerts so they do not overlap by forcing their start times. It is more clear to refer to alert start time as opposed to alert signal. Also in the same sentence we refert to the link partner. See following text and changes in bold on the right
lpi_offset is a fixed value equal to lpi_qr_time / 2 + 4 (52 RS-FEC frame periods) that is used to ensure refresh signals and alert signals are appropriately offset by the link partner’s.

SuggestedRemedy

lpi_offset is a fixed value equal to lpi_qr_time / 2 + 4 (52 RS-FEC frame periods) that is used to ensure refresh signals and alert start times are appropriately offset from the link partner’s.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.5.1** *P* **101** *L* **10** # 33
Benyamin, Saied Aquantia

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

Frame counts are based on RS-Frames, not partial frames

SuggestedRemedy

Remove the word partial in three places on line 10 and line 11

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.5.1** *P* **101** *L* **13** # 34
Benyamin, Saied Aquantia

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

The offset between two link partners is not exactly half cycle, it is 4 frames more than half cycle, change the wording

SuggestedRemedy

Replace the word "half cycle" with "properly"

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.5.1** *P* **101** *L* **19** # 35
Benyamin, Saied Aquantia

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

We need to establish limitation for alert starts so that it does not overlap with the link partner's alert.

SuggestedRemedy

Add the following paragraph:
The four RS-Frame long Alert may start at the beginning of every eighth PHY frame boundary starting at the beginning of the frame following the refresh PHY frame. This sets alert_period to 4 PHY frames and provides the following two benefits: The MASTER and SLAVE allowable alert transmissions do not overlap and Alert does not overlap device’s own refresh. The MASTER and SLAVE shall derive the tx_refresh_active and tx_alert_start signals from the transmitted PHY frames (tx_rsfc) as shown in Table 149-5 and Table 149-6.

Proposed Response *Response Status* **Z**

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

Cl **149** *SC* **149.3.5.1** *P* **101** *L* **27** # 36
Benyamin, Saied Aquantia

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

The table is errneously referring to wake_period for alert calculation

SuggestedRemedy

Change wake_period to alert_period

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.5.1** *P* **101** *L* **36** # 37
Benyamin, Saied Aquantia

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

The table is errneously referring to wake_period for alert calculation

SuggestedRemedy

Change wake_period to alert_period

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.5.3** *P* **101** *L* **47** # 38
Benyamin, Saied Aquantia

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

During LPI, we still need to send the OAM, the following text does not include this, it only mentions that we do not send any infofield data during refresh
with the exception that the infofield consists of a sequence of 128 zeros.

SuggestedRemedy

with the exception that the infofield consists of a sequence of 128 zeros and, in addition, the 10-bit OAM symbol to be transmitted is XORed with the last 10 bits of the PAM2 refresh transmission

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.4.3** *P* **128** *L* **16** # 39
Benyamin, Saied Aquantia

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

rx_boundary description has yellow highligted

SuggestedRemedy

Remove the yellow as the text is correct

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.4.3** *P* **129** *L* **30** # 40
Benyamin, Saied Aquantia

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

tx_boundary description has yellow highligted

SuggestedRemedy

Remove the yellow as the text is correct

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.2** *P* **135** *L* **12** # 41
Benyamin, Saied Aquantia

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

To allow ALERT to transmit link synchronization, we need to add it to the following statement:
when sync_link_control = ENABLE

SuggestedRemedy

when sync_link_control = ENABLE or lpi_tx_mode = ALERT

Proposed Response *Response Status* **O**

Cl **various** *SC* **various** *P* *L* # 42
Benyamin, Saied Aquantia

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

There are a zillion places where 1000Base-T1 is mentioned; on some, we have crossed out the "1000"

SuggestedRemedy

They all need to change to MGBase-T1

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.1.3.4** *P* **71** *L* **1** # 43
Benyamin, Saied Aquantia

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

link synchronization detect needs to be added to PCS since it is used as ALERT detect now

SuggestedRemedy

Functional block diagram 149-2 in the attached word document, errneously numbered 149-3 because I looked at the wrong document

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.1** *P* **134** *L* **1** # 44
Benyamin, Saied Aquantia

Comment Type **TR** *Comment Status* **X**
PMA reference diagram shows alert detect, this is replaced by link synchronization

SuggestedRemedy
See attached word document for Figure 149-24 erroneously numbered as 149-34 because I was looking at the wrong pdf

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.4.2** *P* **128** *L* **16** # 45
Lo, William Axonne Inc.

Comment Type **E** *Comment Status* **X**
Highlighted sentence is accurate

SuggestedRemedy
Remove highlight

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.4.2** *P* **129** *L* **30** # 46
Lo, William Axonne Inc.

Comment Type **E** *Comment Status* **X**
Highlighted sentence is accurate

SuggestedRemedy
Remove highlight

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.2.14** *P* **119** *L* **39** # 47
Lo, William Axonne Inc.

Comment Type **ER** *Comment Status* **X**
Title heading incorrect

SuggestedRemedy
Delete 1000BASE-T1

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.2.20** *P* **95** *L* **43** # 48
Lo, William Axonne Inc.

Comment Type **ER** *Comment Status* **X**
Refresh is PAM2 so we can delete highlightd paragraph.

SuggestedRemedy
delete highlightd paragraph.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.4.4** *P* **100** *L* **8** # 49
Lo, William Axonne Inc.

Comment Type **ER** *Comment Status* **X**
Section duplicated

SuggestedRemedy
Delete section.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.2.1** *P* **115** *L* **3** # 50
Lo, William Axonne Inc.

Comment Type **ER** *Comment Status* **X**
Clarification on the dummy symbol

SuggestedRemedy
Add new paragraph at line 3 as follows:
The dummy OAM symbol is all 0s and its value is ignored at the receiver.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.4.4** *P* **130** *L* **17** # 51

Lo, William Axonne Inc.

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

rx_cnt incorrectly defined

SuggestedRemedy

Change:
A count of received OAM frames
To:
A count of received OAM frame symbols

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.4.1** *P* **147** *L* **42** # 52

Lo, William Axonne Inc.

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

Incorrect reference

SuggestedRemedy

Change 149.4.3 to 149.4.2.7

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.4.1** *P* **147** *L* **3** # 53

Lo, William Axonne Inc.

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

The following variables are correct and should be un-indented and un highlighted. See list below

SuggestedRemedy

Fix indentation and un-highlighted the text associated with the following variables:
en_slave_tx
infofield_complete
loc_phy_ready
loc_countdown_done
PMA_state
rem_phy_ready
sync_link_control

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.4.1** *P* **148** *L* **14** # 54

Lo, William Axonne Inc.

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

rem_countdown_done variable

SuggestedRemedy

Change PAM3 to PAM4

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.4.2** *P* **148** *L* **50** # 55

Lo, William Axonne Inc.

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

Name of states incorrect for minwait_timer
Timer is ok

SuggestedRemedy

Change:
PMA_Training_Init_S, PCS_Test and PCS_Data
To:
SILENT, TRAINING, PCS TEST, and SEND DATA

Timer value is ok ans should be un-highlighted

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.2.13** *P* **118** *L* **13** # 56

Lo, William Axonne Inc.

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

The RS(16, 14) is unnecessary circuitry for PHYs that does not implement EEE. The following changes allows the simplification to be made.
See Lo_3ch_01_0319.pdf slide 3 for the rationale for this change.

SuggestedRemedy

See Lo_3ch_01_0319.pdf slide 4 for the text changes

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.76** *P* **44** *L* **50** # 57

Lo, William — Axonne Inc.

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

OAM status message.
It is not clear whether registers 3.2319 and 3.2319 shouldbe R/W or RO.
Referring to page 117 (159.3.8.2.12)
I think 3.2318.7:2,0 and 3.2319 should be RO since the status is from somewhere else.
3.2318.1 should be R/W since the user will go in to make a request to clear.

Is the intent that these registers are automatic, or is the expectation that the user has to manually write in all these statuses?

SuggestedRemedy

If the intent is these registers are automatic then
3.2318 and 3.2319 should all be changed to RO with the exception of 3.2318.1.
Also the footnote should be changed to include RO.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.2.3.77** *P* **45** *L* **23** # 58

Lo, William — Axonne Inc.

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

3.2320 and 2.2321 should be RO since these are statuses from the link partner.

SuggestedRemedy

Change R/W to RO for 3.2320 and 2.2321
Change the footnote from R/W to RO

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.4.10** *P* **140** *L* **28** # 59

Lo, William — Axonne Inc.

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

Infofield text is corrext.
No more scrambler seed exchange so need to delete sentence.
Section reference

SuggestedRemedy

Line 28) Unhighlight text
Line 29) Delete:
, and the Seed value used by the localdevice for the data mode scrambler initialization
Line 30) Change TBD to 149.4.2.4.5

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.4.10** *P* **141** *L* **16** # 60

Lo, William — Axonne Inc.

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

Text modification to conform to state machine.
Rest of highlighted text is correct

SuggestedRemedy

Un highlight lines 16 to 26
Change rem_phy_ready to PCS_status in line 17

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.7** *P* **146** *L* **4** # 61

Lo, William — Axonne Inc.

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

No state diagram so no reference
Update to correct time

SuggestedRemedy

Delete:
The Refresh monitor shall comply with the state diagram of Figure TBD.

Change:
16.384/S ms to 1.536/S ms

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.5.1** *P* **152** *L* **28** # 62

Lo, William Axonne Inc.

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

Dividing a clock down does not change the clock jitter.
Recommened divide by 32 or 64 so TX_TCLK_DIV is 175.8 or 87.9MHz.

Note that I am ok with either 32 or 64 depending on what people like.

See Lo_3ch_01_0319.pdf slide 5 for a intuitive diagram.

SuggestedRemedy

Change divided by 16 to divided by 32

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.2.19** *P* **95** *L* **41** # 63

Lo, William Axonne Inc.

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

The first PAM4 state entered is TX SWITCH

SuggestedRemedy

Change PAM4 PCS Test to
TX SWITCH state

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.2.21** *P* **96** *L* **23** # 64

Lo, William Axonne Inc.

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

Data are processed in units of superframes.
It makes no sense if the 8 RS-FEC partially fill the final superframe.
A related issue is once the LP_IDLE is sent, the transmitter is committed to sending the complete sleep signal (8 RS-FEC frames worth) and not abort early.

Add the sentences below to clarify how the 8 RS-FEC frames of LP_IDLE are packed at the end of line 23.

SuggestedRemedy

The 8 RS-FEC frames of LP_IDLE completely fill two superframes in L=4 interleave or four superframes in L=2 interleave. Once initiated, the complete sleep signal consisting of 8 RS-FEC frames of LP_IDLE shall be transmitted.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.5.1** *P* **101** *L* **4** # 65

Lo, William Axonne Inc.

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

The method to synchronize the master as slave as described in this section defeats the entire purpose of partial frame count during training as shown in Figure 149-12 and introduces uncertainity in the timing.

SuggestedRemedy

Delete:
The transition to PCS_Test is used as a fixed timing reference for the link partners. Refresh signaling is derived by counting RS-FEC frames from the transition to PCS_Test. At the Master RS-FEC frame count of zero and all multiples of 96 RS-FEC frames thereafter denote the start of the cycle.

Replace with:
Refresh signaling is derived by tracking the partial frame count as shown in Figure 149-12.

Delete (lines 16, 17):

Following the transition to PAM4, the PCS continues to count transmitted RS-FEC frames (tx_rsfc), and uses the counter to generate refresh, ALERT, and wake control signals for the transmit functions.

Replace with:
Following the transition to PAM4, the PCS continues to count partial frames and uses the count to generate refresh, ALERT, and wake control signals for the transmit functions.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.4.6** *P* **131** *L* **26** # 66

Lo, William — Axonne Inc.

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

State machine issues:
Typo from modifying from 1000BASE-T1 and missing transitions and not quite correct exit condition

SuggestedRemedy

Change:
Parity_Check(rx_oam_field<8:0>) = Even
To:
frame_boundary = True * (rx_cnt != 16)

Change:
RECEIVE INIT to CHECK READ transition should be
rx_boundary (currently it is blank)

Change:
In the LOAD SYMBOL state change
rx_boundary To:
rx_boundary | (rx_cnt = 16)

Add:
rx_cnt <= 0 at the bottom of the LOAD RECEIVE PAYLOAD state

Delete in 2 places
* (frame_boundary = False)

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.4.2** *P* **148** *L* **45** # 67

Lo, William — Axonne Inc.

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

Time way too long for aceptable startup in automotive applications.
Change to match 1000BASE-T1.

SuggestedRemedy

Change:
2000 ms +/- 10ms
To:
97.5 ms +/- 0.5 ms

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.5** *P* **151** *L* **18** # 68

Lo, William — Axonne Inc.

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

Missing watchdog conditions and refresh status link down conditions

SuggestedRemedy

See Lo_3ch_01_0319.pdf slide 2 for correct state machine.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.4.1** *P* **147** *L* **53** # 69

Lo, William — Axonne Inc.

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

PMA_watchdog_status definition needs updating

SuggestedRemedy

See Lo_3ch_01_0319.pdf slide 2 for text

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.5.1** *P* **101** *L* **28** # 70

Graba, Jim — Broadcom

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

Need tx_lpi_full_refresh condition in Table 149-3

SuggestedRemedy

Add row to Table 149-3. First column: tx_lpi_full_refresh=true. Second column: mod(u, lpi_qr_time) = lpi_offset - lpi_refresh_time

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.5.1** *P* **101** *L* **38** # 71
Graba, Jim Broadcom

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

Need tx_lpi_full_refresh condition in Table 149-4

SuggestedRemedy

Add row to Table 149-4. First column: tx_lpi_full_refresh=true. Second column: mod(v,lpi_qr_time) = lpi_quiet_time

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.5.1** *P* **101** *L* **19** # 72
Graba, Jim Broadcom

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

Establish a limitation for alert starts so that it does not overlap with the link partner's alert.

SuggestedRemedy

Insert the following paragraph:
The four RS-Frame long Alert shall start at the beginning of any eighth PHY frame boundary starting at the beginning of the frame following the efresh PHY frame. This offsets the master and slave alert start times by alert_period/2 = 4 PHY frames and provides the following two benefits: The MASTER and SLAVE allowable alert transmissions do not overlap and Alert does not overlap device's own refresh. The MASTER and SLAVE shall derive the tx_refresh_active and tx_alert_start signals from the transmitted PHY frames (tx_rsfc) as shown in Table 149-3 and Table 149-4.

Proposed Response *Response Status* **O**

Cl **78** *SC* **78.2** *P* **52** *L* **42** # 73
Graba, Jim Broadcom

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

Tq is 95 frames.

SuggestedRemedy

Change Tq from [126.72, 63.36, 31.68] us to [121.6, 60.8, 30.4] us for 2.5G/5G/10G respectively in Table 78-2..

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.6.2.3** *P* **104** *L* **2** # 74
Graba, Jim Broadcom

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

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.7** *P* **146** *L* **5** # 75
Graba, Jim Broadcom

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

Update the moving time window length to be equivalent to 2.5G/5G/10GBASE-T

SuggestedRemedy

Change 50 to 256. Change 16.384/S ms to 7.864/S ms

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.5.x** *P* **151** *L* **27** # 76
Graba, Jim Broadcom

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

Add EEE Refresh monitor state diagram

SuggestedRemedy

Use same EEE Refresh monitor state diagram from 802.3bz (Figure 126-30)

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.7** *P* **146** *L* **5** # 77
Graba, Jim Broadcom

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

Update TBD

SuggestedRemedy

Point to figure containing EEE Refresh monitor state diagram

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.6.3** *P* **112** *L* **44** # 78
Graba, Jim Broadcom

Comment Type **TR** *Comment Status* **X**
Add EEE transmit state diagram

SuggestedRemedy
Insert EEE transmit state diagram with changes as shown in EeeTransmitStateDiagramMarkUp_Graba_20190222.pdf

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.6.2.2** *P* **103** *L* **29** # 79
Graba, Jim Broadcom

Comment Type **ER** *Comment Status* **X**
Yellow highlighting is no longer needed

SuggestedRemedy
Remove highlighting

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.6.2.3** *P* **104** *L* **40** # 80
Graba, Jim Broadcom

Comment Type **ER** *Comment Status* **X**
Yellow highlighting is no longer needed

SuggestedRemedy
Remove highlighting from lines 40 - page 105 line 7

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.6.2.3** *P* **104** *L* **45** # 81
Graba, Jim Broadcom

Comment Type **TR** *Comment Status* **X**
lpi_tx_sleep_timer is wrong

SuggestedRemedy
Replace 6 RS-FEC with 8 RS-FEC

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.2.21** *P* **96** *L* **18** # 82
Graba, Jim Broadcom

Comment Type **TR** *Comment Status* **X**
Update TBD

SuggestedRemedy
Point to figure containing EEE transmit state diagram

Proposed Response *Response Status* **O**

Cl **96** *SC* **96.5.1** *P* **56** *L* **8** # 83
Tu, Mike Broadcom

Comment Type **ER** *Comment Status* **X**
The editor note should refer to 98.5.1, not 98.1.5.

SuggestedRemedy
Change the editor note from "… dashed list of 98.1.5 after …"
to
"… dashed list of 98.5.1 after …"

Proposed Response *Response Status* **O**

Cl **125** *SC* **125.1.2** *P* **62** *L* **14** # 84
Tu, Mike Broadcom

Comment Type **E** *Comment Status* **X**
Change the name of the PCS layer to be consistent with the other 5G/2.5G standards.

SuggestedRemedy
For 2.5GBASE-T1, change "64B/65B RS-FEC PCS" to "2.5GBASE-T1 PCS".
For 5GBASE-T1, change "64B/65B RS-FEC PCS" to "5GBASE-T1 PCS".

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.5.2.6** *P* **156** *L* **40** # 85
Tu, Mike Broadcom

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

The transmission rate should scale by the factor "S".

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.3** *P* **97** *L* **38** # 86
Tu, Mike Broadcom

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

There are 450 PAM2 symbols per partial frame.

SuggestedRemedy

Within the highlighted text, change "180" to "450". Then remove the highlights.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.4.10** *P* **140** *L* **28** # 87
Tu, Mike Broadcom

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

Remove the editorial highligh**s**

SuggestedRemedy

Remove the editorial highligh**s**

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.4.10** *P* **140** *L* **29** # 88
Tu, Mike Broadcom

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

There is no need to exchange the Seed values. There are no user configurable register bits either. However the PHY shall indicate the precoder and the interleaver selections.

SuggestedRemedy

Change the last sentence to "The PHY Control also sets PMA_state = 00 and sends the PHY capability bits, and select the precoder and the interleaver depth".

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.4.10** *P* **141** *L* **16** # 89
Tu, Mike Broadcom

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

The paragraph should be revised in order to match Figure 149-31 PHY Control state diagram.

SuggestedRemedy

Change the paragraph to "Upon expiration of the minwait_timer and when the condition loc_rcvr_status = OK and PCS_status = OK is satisfied, PHY control transitions to the SEND_DATA state."

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.4.10** *P* **141** *L* **19** # 90
Tu, Mike Broadcom

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

This paragraph needs to be revised to match to the PHY Control state diagram.

SuggestedRemedy

Change the paragraph to "Upon entering the SEND_DATA state, PHY Control starts the minwait_timer and stops the maxwait_timer."

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.4.10** *P* **141** *L* **22** # 91
Tu, Mike Broadcom

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

Remove editorial highlights in this paragraph.

SuggestedRemedy

Remove editorial highlights in this paragraph.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.5** *P* **150** *L* **42** # 92
Tu, Mike Broadcom

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

The tx_mode has already been set to "SEND_N" in the "TX_SWITCH" state. There is no need to set it again.

SuggestedRemedy

1. In the "PCS_TEST" block, remove "tx_mode <= SEND_N"
2. In the "SEND_DATA" block, remove "tx_mode <= SEND_N"

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.7.3** *P* **112** *L* **50** # 93
Tu, Mike Broadcom

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

Change "TBD" to "65B RS-FEC"

SuggestedRemedy

Change "TBD" to "65B RS-FEC"

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.2.2** *P* **74** *L* **28** # 94
Tu, Mike Broadcom

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

Variable "rem_phy_ready" is no longer used

SuggestedRemedy

1. Delete line 28 "PMA_REMPHYREADY.request(rem_phy_ready)"
2. Delete references to "rem_phy_ready" at the following location:
2.1 Page 71, line 34, Figure 149-2, change from "rem_rcvr_status / rem_phy_ready" to "rem_rcvr_status".
2.2 Page 80, delete 149.2.2.10, 149.2.2.10.1, 149.2.2.10.2, and 149.2.2.10.3.
2.3 Page 82, line 24, Figure 149-4, change from "rem_rcvr_status / rem_phy_ready" to "rem_rcvr_status".
2.4 Page 134, line 11, Figure 149-24, change from "rem_rcvr_status / rem_phy_ready" to "rem_rcvr_status".
2.5 Page 148, delete line 14 to line 20.
2.6 Page 75, line 26, delete "PMA_REMPHYREADY.request" and the associated ARROW.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.2.16** *P* **93** *L* **33** # 95
Tu, Mike Broadcom

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

Line 33 to line 37 are the same as line 27 to line 31.

SuggestedRemedy

Delete line 33 to line 37.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.2.16** *P* **94** *L* **19** # 96
Tu, Mike Broadcom

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

Wrong indices. "m_L" should be "m_0" at both the input and the output of the Lth encoder.

SuggestedRemedy

Change "m_L" to "m_0" at bot the input and the output of the Lth RS Encoder.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.2.18** *P* **95** *L* **1** # 97
Tu, Mike Broadcom

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

This paragraph seems to be the redundant. Keep line 4 and 5.

SuggestedRemedy

Delete Line 1 and line 2.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.2.20** *P* **96** *L* **3** # 98
Tu, Mike Broadcom

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

"P(r,t)" probably should be "P(u)"

SuggestedRemedy

Replace "P(r,t)" on line 3 and line 6 by "P(u)"

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.3** *P* **97** *L* **14** # 99
Tu, Mike Broadcom

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

Change "65B-RS-FEC" to "65B RS-FEC", same as the convention used in 149.3.2.2.2

SuggestedRemedy

Change "65B-RS-FEC" on line 14 and line 15 to "65B RS-FEC".

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.4.10** *P* **140** *L* **46** # 100
Tu, Mike Broadcom

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

Change "65B-RS-FEC" to "65B RS-FEC", same as the convention used in 149.3.2.2.2

SuggestedRemedy

Change "65B-RS-FEC" on line 14 and line 15 to "65B RS-FEC".

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.6.3** *P* **107** *L* **17** # 101
Tu, Mike Broadcom

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

The RFER monitor state diagram is missing.

SuggestedRemedy

1. Copy Figure 97-13 as RFER monitor state diagram
2. On line 17, change Figure 149-TBD to the figure number of this inserted figure.
3. Before 149.3.6.3, add "149.3.6.2.6 Messages", with content:
RX_FRAME
A signal sent to PCS Receive indicating that a full Reed-Solomon frame has been decoded and the variable rf_valid is updated.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.6.2.5** *P* **107** *L* **1** # 102
Tu, Mike Broadcom

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

Remove editorial highlights from line 1 to line 5.

SuggestedRemedy

Remove editorial highlights on line 1 to line 5.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.6.3** *P* **107** *L* **20** # 103
Tu, Mike Broadcom

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

Remove editorial highlights from line 17 to line 35.

SuggestedRemedy

Remove editorial highlights from line 17 to line 35.

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.7.2** P **108** L **24** # 104
Tu, Mike Broadcom

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

There are only 6 bits in MDIO register bits 3.2324.5:0.

SuggestedRemedy

Change from "X-bit counter that …" to "6-bit counter that …".

Proposed Response *Response Status* **O**

Cl **149** SC **149.4.2.3** P **135** L **34** # 105
Tu, Mike Broadcom

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

1. For 1000BASE-T1, RFER = BER (<1e-10) * bits/RS-FEC (3600) < 3.6e-7. See 97.4.2.3.
2. For 10GBASE-T, LFER = BER (<1e-12) * bits/LDPC frame (3200) < 3.2e-9. See 55.4.2.4.
3. So it is reasonable for 802.3ch to set RFER = BER (<1e-12) * bits/RS-FEC (3200) < 3.2e-9.

SuggestedRemedy

Change "TBD" to "3.2 x 10^{-9}".

Proposed Response *Response Status* **O**

Cl **149** SC **149.4.2.8** P **146** L **13** # 106
Tu, Mike Broadcom

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

Remove editorial highlight.

SuggestedRemedy

Remove editorial highlight.

Proposed Response *Response Status* **O**

Cl **149** SC **149.4.4.1** P **147** L **3** # 107
Tu, Mike Broadcom

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

Remove editorial highlight.

SuggestedRemedy

Remove editorial highlight from line 3 to line 12.

Proposed Response *Response Status* **O**

Cl **149** SC **149.4.4.1** P **147** L **19** # 108
Tu, Mike Broadcom

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

Remove editorial highlight.

SuggestedRemedy

Remove editorial highlight from line 19 to line 30

Proposed Response *Response Status* **O**

Cl **149** SC **149.4.4.1** P **147** L **47** # 109
Tu, Mike Broadcom

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

Remove editorial highlight.

SuggestedRemedy

Remove editorial highlight from line 47 to line 54

Proposed Response *Response Status* **O**

Cl **149** SC **149.4.4.1** P **148** L **1** # 110
Tu, Mike Broadcom

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

Change "PAM3" to "PAM4"

SuggestedRemedy

On line 1, 2, 4, 5, 7, 9, change "PAM3" to "PAM4".

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.4.1** *P* **148** *L* **13** # 111

Tu, Mike Broadcom

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

Transition is from PAM2 to PAM4. Also it only depends on the received InfoField PFC24 counter.

SuggestedRemedy

Change from "… the receiver has transitioned from PAM2 to PAM3 mode and has received a valid PHY frame containing all IDLEs."
to "… the receiver has transitioned from PAM2 to PAM4."

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.1.3.3** *P* **69** *L* **15** # 112

Chen, Steven Broadcom

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

The transmit transition to the LPI transmit mode is based on the TXD[31:0] of the XGMII, not in the last 64B/64B block of a RS frame.

SuggestedRemedy

Change "… an LPI control character in the last 64B/65B block of a Reed-Solomon frame."
to "… an LPI control character in all four lanes of two consecutive transfers of TXD[31:0] that will be mapped into a single 64B/65B block."

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.1.3.3** *P* **69** *L* **46** # 113

Chen, Steven Broadcom

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

L46~L49
Need to refer to the appropriate Figures.

SuggestedRemedy

Replace "126-14" with the cross-reference to the figure captioned "PCS 64B/65B Transmit state diagram, part a" currently labelled "149-13".
Replace "126-15" with the cross-reference to the figure captioned "PCS 64B/65B Transmit state diagram, part b" currently labelled "149-14".
Replace "126-16" with the cross-reference to the figure captioned "PCS 64B/65B Receive state diagram, part a" currently labelled "149-15".
Replace "126-17" with the cross-reference to the figure captioned "PCS 64B/65B Receive state diagram, part a" currently labelled "149-16".
Replace "126-18" with the cross-reference to the figure captioned "EEE transmit state diagram"

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.2.2.3** *P* **76** *L* **34** # 114

Chen, Steven Broadcom

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

Using XGMII instead.

SuggestedRemedy

Change "to represent GMII data and ..." to "to represent XGMII data and ..."
Suggest to search and replace it globally.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.4.1** *P* **148** *L* **37** # 115

Chen, Steven Broadcom

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

The variable pcs_data_mode is not defined.

SuggestedRemedy

Copy from Clause 55.4.5.1 and insert here.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.2.16** *P* **93** *L* **33** # 116
Chen, Steven Broadcom

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

The L33~L37 seems being a duplicated copy of the L27~L31.

SuggestedRemedy

Remove L33~L37.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.2.16** *P* **94** *L* **19** # 117
Chen, Steven Broadcom

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

The last message symbol of the input message symbols should be m0, not mL.

SuggestedRemedy

In the input message symbols, change "mL" to "m0".

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.6.2.4** *P* **105** *L* **13** # 118
Chen, Steven Broadcom

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

There's no definition for rx_symb_vector. The rx_symb is defined instead.

SuggestedRemedy

Change "rx_symb_vector" to "rx_symb".

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.7.1** *P* **107** *L* **46** # 119
Chen, Steven Broadcom

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

Change PCS_status to the defined pcs_status for naming consistency.

SuggestedRemedy

Change "PCS_status" to "pcs_status"
Suggest to search and replace it globally.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.7.2** *P* **111** *L* **5** # 120
Chen, Steven Broadcom

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

The "fr_active" and "fr_sigtype" is not defined and should be removed.

SuggestedRemedy

Change
"if !fr_active
 rx_raw <= LBLOCK_R
 else
 rx_raw <= fr_sigtype
 end"
to
"rx_raw <= LBLOCK_R"

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8** *P* **113** *L* **14** # 121
Chen, Steven Broadcom

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

The OAM10 is not defined.

SuggestedRemedy

Change "the OAM10 field" to "the OAM 10-bit field"
Also replace the same issue in page 113 line 30.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.2.12** *P* **117** *L* **31** # 122
Chen, Steven Broadcom

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

The definition of "not receiving transmit messaged from the MAC" needs to be clarified.

SuggestedRemedy

Change "… not receiving transmit messaged from the MAC" to "… not receiving valid transmit message from the MAC"

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.8.4.3** P **125** L **27** # 123
Chen, Steven Broadcom

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

The mr_rx_lp_message[95:0] has 12 Octets.

SuggestedRemedy

Change "Eight octet BASE-T1 OAM from ..." to "Twelve octet BASE-T1 OAM from ..."

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.8.4.6** P **131** L **17** # 124
Chen, Steven Broadcom

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

The downward arrow from RECEIVE INIT state to CHECK READ state is missing the transition condition.

SuggestedRemedy

Add conditional label "UCT" for the arrow in the middle.

Proposed Response *Response Status* **O**

Cl **149** SC **149.4.2.5** P **141** L **32** # 125
Chen, Steven Broadcom

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

Use the Link Synchronization when AN is disabled.

SuggestedRemedy

Change the "synchronization ..." to "Link Synchronization ...".

Proposed Response *Response Status* **O**

Cl **149** SC **149.4.5** P **150** L **37** # 126
Chen, Steven Broadcom

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

The "start minwait_timer" does not seem needed in the TX_SWITCH state.

SuggestedRemedy

Remove "start minwait_timer".

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.8.2.12** P **118** L **7** # 127
Chen, Steven Broadcom

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

Unclear which RS-FEC block errors since we have different RS-FEC for both RS-FEC frame and OAM message, respectively.

SuggestedRemedy

Change "… RS-FEC block errors" to "… RS-FEC frame block errors"

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.8.2.5** P **116** L **1** # 128
Chen, Steven Broadcom

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

To exit the LPI would require to change MAC layer.

SuggestedRemedy

Remove "Request link partner to exit LPI and send idles"

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.8.2.12** P **117** L **42** # 129
Chen, Steven Broadcom

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

This standard requires single pair cable. There's no pair swap.

SuggestedRemedy

Remove L42 to L47.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.2.2** *P* **74** *L* **26** # 130

Chen, Steven Broadcom

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

variable loc_phy_ready is not used.

SuggestedRemedy

1. Remove "PMA_PHYREADY.indication(loc_phy_ready)".
2. In page 71 line26, renove "loc_phy_ready" in Figure 149-2.
3. In page 79, remove lines from 1 to 22.
4. In page 82 line 26, remove "loc_phy_ready" in Figure 149-4.
5. In page 134 line 8, remove "loc_phy_ready" in Figir 149-24.
6. In page 147, remove lines from 19 to 26.

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.3** *P* **22** *L* **6** # 131

Wienckowski, Natalie General Motors

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

Change wording of Editor's note.

SuggestedRemedy

Change: Insert the following references in 1.3 alphanumeric order as follows:
To: Insert the following references in 1.3 in alphanumeric order as follows:

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4** *P* **22** *L* **26** # 132

Wienckowski, Natalie General Motors

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

Missing space

SuggestedRemedy

Change: 802.3cb-2018)as
To: 802.3cb-2018) as

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.5** *P* **22** *L* **50** # 133

Wienckowski, Natalie General Motors

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

Remove note on the type of paragraph to use for Abbreviations.

SuggestedRemedy

Remove: [abbreviations use paragraph tag AcrList,ac]

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.192.3** *P* **35** *L* **13** # 134

Wienckowski, Natalie General Motors

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

typo

SuggestedRemedy

Change: the device shall, as a minimum
To: the device shall, at a minimum

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.192.4** *P* **35** *L* **28** # 135

Wienckowski, Natalie General Motors

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

verb/noun agreement

SuggestedRemedy

Change: Setting these bits force the precoder to the mode set.
To: Setting these bits forces the precoder to the mode set.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.194.4** *P* **38** *L* **9** # 136
Wienckowski, Natalie General Motors

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

We don't need to keep repeating MultiGBASE-T1.

SuggestedRemedy

Change: When set as a one, this bit indicates to the link partner that the MultiGBASE-T1 PHY is advertising MultiGBASE-T1 OAM capability. When set as a zero, this bit indicates to the link partner that the MultiGBASE-T1 PHY is not advertising MultiGBASE-T1 OAM capability. This bit shall be set to zero if the MultiGBASE-T1 PHY does not support MultiGBASE-T1 OAM.
To: When set as a one, this bit indicates to the link partner that the PHY is advertising MultiGBASE-T1 OAM capability. When set as a zero, this bit indicates to the link partner that the 1 PHY is not advertising MultiGBASE-T1 OAM capability. This bit shall be set to zero if the PHY does not support MultiGBASE-T1 OAM.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.194.5** *P* **38** *L* **16** # 137
Wienckowski, Natalie General Motors

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

We don't need to keep repeating MultiGBASE-T1.

SuggestedRemedy

Change: When set as a one, this bit indicates to the link partner that the MultiGBASE-T1 PHY is advertising EEE capability. When set as a zero, this bit indicates to the link partner that the MultiGBASE-T1 PHY is not advertising EEE capability. This bit shall be set to zero if the MultiGBASE-T1 PHY does not support EEE.
To: When set as a one, this bit indicates to the link partner that the PHY is advertising EEE capability. When set as a zero, this bit indicates to the link partner that the PHY is not advertising EEE capability. This bit shall be set to zero if the PHY does not support EEE.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.76** *P* **44** *L* **42** # 138
Wienckowski, Natalie General Motors

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

The details on the OAM Status bytes are defined in 149.3.8.2.12. Refer to that section for these bytes.

SuggestedRemedy

Replace: The message data is user defined and its definition is outside the scope of this standard.
With: See 149.3.8.2.12 for details on the OAM status message definition.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.80.5** *P* **49** *L* **13** # 139
Wienckowski, Natalie General Motors

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

There is a carriage return that shouldn't be there. This section should be a single paragraph.

SuggestedRemedy

Remove the carriage return after "behavior." to bring the following line into the same paragraph.

Proposed Response *Response Status* **O**

Cl **125** *SC* **125.1.2** *P* **62** *L* **17** # 140
Wienckowski, Natalie General Motors

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

alignment of figure elements

SuggestedRemedy

Need to align MDI box of 5GBASE-T which overlaps the AN box.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149** *P* **66** *L* **2** # 141
Wienckowski, Natalie General Motors

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

missing comma

SuggestedRemedy

Change: (PMA) sublayer and
To: (PMA) sublayer, and

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.1.3** *P* **66** *L* **49** # 142
Wienckowski, Natalie General Motors

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

missing space

SuggestedRemedy

Change: at least 15 m.The
To: at least 15 m. The

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.1.3** *P* **67** *L* **54** # 143
Wienckowski, Natalie General Motors

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

We agreed to call the OAM "MultiGBASE-T1 OAM".

SuggestedRemedy

Change: 2.5G/5G/10GBASE-T1 OAM
To: MultiGBASE-T1 OAM throughout this section and the document.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.1.3** *P* **68** *L* **7** # 144
Wienckowski, Natalie General Motors

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

Use common abreviation for the combined PHY types.

SuggestedRemedy

Change: The 2.5GBASE-T1, 5GBASE-T1, or 10GBASE-T1 PMA
To: 2.5G/5G/10GBASE-T1 PMA

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.1** *P* **135** *L* **7** # 145
Wienckowski, Natalie General Motors

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

Add requirement for time allowed to perform a reset at the end of this section.

SuggestedRemedy

Add a new paragraph at the end of this section: The time for the PMA to resume normal transmit and receive functions after pma_reset transitions to OFF shall not exceed 20 ms.

Proposed Response *Response Status* **Z**

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

Cl **45** *SC* **45.2.1.192.1** *P* **34** *L* **28** # 146
Wienckowski, Natalie General Motors

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

Remove timing for restoration of normal operation and refer to 149.4.2.1 instead.

SuggestedRemedy

Change: The control and management interface shall be restored to operation within 0.5 s from the setting of bit 1.2309.15.
To: The control and management interface shall be restored to operation within the time specified in 149.4.2.1 from the setting of bit 1.2309.15.

Proposed Response *Response Status* **Z**

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

Cl **125** *SC* **125.1.2** *P* **61** *L* **12** # 147
Wienckowski, Natalie General Motors

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

Incorrect wording for MDI

SuggestedRemedy

Change: Media Dependent Interface (MDI)
To: Medium Dependent Interface (MDI)

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.1.3.3** *P* **69** *L* **20** # 148
Wienckowski, Natalie General Motors

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

missing comma

SuggestedRemedy

Change: Periodically the transmit
To: Periodically, the transmit

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.1.3.3** *P* **69** *L* **25** # 149
Wienckowski, Natalie General Motors

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

Duplicate sentence.

SuggestedRemedy

Remove one instance of: The PMA Transmit function in the PHY then sends an alert message to the link partner.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.1.3.3** *P* **69** *L* **43** # 150
Wienckowski, Natalie General Motors

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

Origianal OAM bytes are now named "BASE-T1 OAM".

SuggestedRemedy

Change: 2.5G/5G/10GBASE-T1 OAM
To: BASE-T1 OAM

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.1.3.4** *P* **69** *L* **53** # 151
Wienckowski, Natalie General Motors

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

missing comma

SuggestedRemedy

Change: The Link Synchronization function is used when Auto-Negotiation is disabled to synchronize between the …
To: The Link Synchronization function is used when Auto-Negotiation is disabled, to synchronize between the …

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.1.4** *P* **72** *L* **16** # 152
Wienckowski, Natalie General Motors

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

missing comma before and

SuggestedRemedy

Change: refresh, quiet and alert signaling
To: refresh, quiet, and alert signaling

Proposed Response *Response Status* **O**

Cl **149** SC **149.1.4** P **72** L **23** # 153
Wienckowski, Natalie General Motors

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

subject/verb agreement

SuggestedRemedy

Change: which enable the receiver
To: which enables the receiver

Proposed Response *Response Status* **O**

Cl **149** SC **149.2.2.1.1** P **74** L **48** # 154
Wienckowski, Natalie General Motors

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

We removed SEND_I, but didn't change the number of values to "three" from "four" in the text.

SuggestedRemedy

Change: four
To: three

Proposed Response *Response Status* **O**

Cl **149** SC **149.2.2.3.1** P **76** L **44** # 155
Wienckowski, Natalie General Motors

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

Formatting of text under SYMB and ALERT does not match the rest of the document.

SuggestedRemedy

Fix the paragraph formatting.

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.2.2** P **83** L **10** # 156
Wienckowski, Natalie General Motors

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

Add commas for readability.

SuggestedRemedy

Change: These bits are then mapped two at a time into a PAM4 symbol.
To: These bits are then mapped, two at a time, into a PAM4 symbol.

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.2.2** P **83** L **22** # 157
Wienckowski, Natalie General Motors

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

Missing open parenthesis

SuggestedRemedy

Change: Tn)
To: (Tn)

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.2.2** P **83** L **23** # 158
Wienckowski, Natalie General Motors

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

Change signal value to +1 for consistency.

SuggestedRemedy

Change: {-1, 1}
To: {-1, +1}

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.2.2.1** P **84** L **4** # 159
Wienckowski, Natalie General Motors

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

SuggestedRemedy
Change: 65B-RS_FEC
To: 65B RS-FEC

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.2.3** P **97** L **14** # 160
Wienckowski, Natalie General Motors

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

SuggestedRemedy
Change: 65B-RS-FEC
To: 65B RS-FEC
Also page 97 line 15 and page 140 line 46.

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.2.2.2** P **85** L **31** # 161
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**
extraneous word

SuggestedRemedy
Remove the word "pair" from Figure 149-6. This is left from the 4-pair figure and ins't needed here.

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.8.4.3** P **127** L **35** # 162
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**
We changed to BASE-T1 OAM

SuggestedRemedy
Change: 1000BASE-T1 OAM
To: BASE-T1 OAM

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.8.4.3** P **127** L **43** # 163
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**
missing periods

SuggestedRemedy
Add periods at the end of both "Values" sentences.

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.8.4.3** P **127** L **49** # 164
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**
missing period

SuggestedRemedy
Add period at end of "Good" sentence.

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.8.4.3** P **128** L **19** # 165
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**
missing periods

SuggestedRemedy
Add periods at the end of both "Values" sentences.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.4.3** *P* **129** *L* **20** # 166
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**
missing periods

SuggestedRemedy
Add periods at the end of all 4 "Values" sentences.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.4.3** *P* **129** *L* **33** # 167
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**
missing periods

SuggestedRemedy
Add periods at the end of both "Values" sentences.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2** *P* **134** *L* **47** # 168
Wienckowski, Natalie General Motors

Comment Type **T** *Comment Status* **X**
Incorrect Figure reference

SuggestedRemedy
Change: Figure 149-12
To: Figure 149-24
Make the same change on line 49.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.1** *P* **135** *L* **4** # 169
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**
missing space

SuggestedRemedy
Change: hold true.All
To: hold true. All

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.2** *P* **135** *L* **11** # 170
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**
missing comma

SuggestedRemedy
Change: onto the MDI pulses modulated
To: onto the MDI, pulses modulated

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.2** *P* **135** *L* **14** # 171
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**
missing comma

SuggestedRemedy
Change: (DAC) and subsequent
To: (DAC), and subsequent

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.2.1** *P* **135** *L* **26** # 172
Wienckowski, Natalie General Motors

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

improve wording by removing an extra "transmitter".

SuggestedRemedy

Change: When the PMA_transmit_disable variable is set to true, this function shall turn off the transmitter so that the transmitter Average Launch Power of the Transmitter is less than –53 dBm.
To: When the PMA_transmit_disable variable is set to true, this function shall turn off the transmitter so that the Average Launch Power of the Transmitter is less than –53 dBm.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.3** *P* **135** *L* **44** # 173
Wienckowski, Natalie General Motors

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

subject/verb agreement

SuggestedRemedy

Change: from any other values
To: from any other value

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.4** *P* **136** *L* **14** # 174
Wienckowski, Natalie General Motors

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

extra "F"

SuggestedRemedy

Change: Ffigure 149-27
To: Figure 149-27

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.4.2** *P* **137** *L* **3** # 175
Wienckowski, Natalie General Motors

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

The SOF is 3 octets, not 4. Also, fix subject/verb agreement.

SuggestedRemedy

Change: The start of Frame Delimiter consist of 4 octets [Octet 1<7:0>, Octet 2<7:0>, Octet 3<7:0>]
To: The start of Frame Delimiter consists of 3 octets [Octet 1<7:0>, Octet 2<7:0>, Octet 3<7:0>]

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.4.4** *P* **137** *L* **15** # 176
Wienckowski, Natalie General Motors

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

Not a sentence

SuggestedRemedy

Change: Message Field (1 octet).
To: The Message Field is 1 octet.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.4.5** *P* **138** *L* **17** # 177
Wienckowski, Natalie General Motors

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

Should be the letter "O", not the number "0".

SuggestedRemedy

Change: [0ct8<7:0>, 0ct9<7:0>, 0ct10<7:0>]
To: [Oct8<7:0>, Oct9<7:0>, Oct10<7:0>]

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.4.10** *P* **140** *L* **44** # 178
Wienckowski, Natalie General Motors

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

Add commas for readability.

SuggestedRemedy

Change: In SLAVE mode PHY Control transitions to the TRAINING state only after the SLAVE PHY acquires timing, converges its equalizers, acquires its descrambler state and sets loc_SNR_margin = OK.
To: In SLAVE mode, PHY Control transitions to the TRAINING state only after the SLAVE PHY acquires timing, converges its equalizers, acquires its descrambler state, and sets loc_SNR_margin = OK.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.5** *P* **141** *L* **36** # 179
Wienckowski, Natalie General Motors

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

subject/verb agreement

SuggestedRemedy

Change: the Auto-Negotiation function set link_control
To: the Auto-Negotiation function sets link_control

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.3.1** *P* **146** *L* **21** # 180
Wienckowski, Natalie General Motors

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

there is only 1 pair

SuggestedRemedy

Change: The modulation scheme used over each pair is PAM4.
To: The modulation scheme used is PAM4.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.3.1** *P* **146** *L* **27** # 181
Wienckowski, Natalie General Motors

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

fix "-" and add "+" to be consistent with the rest of the document.

SuggestedRemedy

Change: {–1, -1/3, 1/3, 1}
To: {–1, –1/3, +1/3, +1}

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.5.1** *P* **151** *L* **37** # 182
Wienckowski, Natalie General Motors

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

Add commas for readability.

SuggestedRemedy

Change: If MDIO is implemented these test modes shall be enabled by setting a control register 1.2313.15:13 as
To: If MDIO is implemented, these test modes shall be enabled by setting a control register, 1.2313.15:13, as

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.5.1** *P* **152** *L* **36** # 183
Wienckowski, Natalie General Motors

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

Remove extraneous comma

SuggestedRemedy

Change: , or,
To: , or

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.5.1.1** *P* **154** *L* **26** # 184
Wienckowski, Natalie General Motors

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

SuggestedRemedy

Remove "Link Partner" box in Figure 149-36 over the Figure title.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.2.3** *P* **85** *L* **37** # 185
Wienckowski, Natalie General Motors

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

Need to keep this paragraph with the one before it instead of allowing them to be separated by the Figures or the statement "The subscript in the above labels" is out of context.

SuggestedRemedy

Keep paragraphs together through formatting.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.2.16** *P* **93** *L* **36** # 186
Wienckowski, Natalie General Motors

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

i,r should be subscripts

SuggestedRemedy

For pi,r, change i,r to a subscript of p.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.2.21** *P* **96** *L* **27** # 187
Wienckowski, Natalie General Motors

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

Add comma for readability.

SuggestedRemedy

Change: After the sleep signal is transmitted LPI control characters shall be
To: After the sleep signal is transmitted, LPI control characters shall be

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.3** *P* **97** *L* **28** # 188
Wienckowski, Natalie General Motors

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

Add comma for readability.

SuggestedRemedy

Change: monitors the signal quality asserting hi_rfer if excessive
To: monitors the signal quality, asserting hi_rfer if excessive

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.3** *P* **97** *L* **51** # 189
Wienckowski, Natalie General Motors

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

Add comma for readability.

SuggestedRemedy

Change: After these frames the link partner
To: After these frames, the link partner

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.3.2** *P* **98** *L* **16** # 190
Wienckowski, Natalie General Motors

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

The equation references are swapped. The Master receive function should use the Slave transmit scrambler to descramble and the Slave receiver should use the Master transmit scrambler to descramble.

SuggestedRemedy

Swap the references to Equation (149-5) and Equation (149-6) in the following text: For side-stream descrambling, the MASTER PHY shall employ the receiver descrambler generator polynomial per Equation (149–5) and the SLAVE PHY shall employ the receiver descrambler generator polynomial per Equation (149–6).

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.4.4** *P* **100** *L* **8** # 191
Wienckowski, Natalie General Motors

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

This is a duplicate of 149.3.4.3.

SuggestedRemedy

Delete 149.3.4.4.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.5** *P* **100** *L* **25** # 192
Wienckowski, Natalie General Motors

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

Add comma for readability.

SuggestedRemedy

Change: Within the LPI mode PHYs use a repeating quiet-refresh cycle
To: Within the LPI mode, PHYs use a repeating quiet-refresh cycle

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.5** *P* **100** *L* **30** # 193
Wienckowski, Natalie General Motors

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

Add comma for readability.

SuggestedRemedy

Change: lpi_qr_time equal to 96 RS-FEC frame periods.
To: lpi_qr_time, equal to 96 RS-FEC frame periods.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.5** *P* **100** *L* **29** # 194
Wienckowski, Natalie General Motors

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

grammer - the letter L is "el" which requires an in front of it

SuggestedRemedy

Change: a LPI
To: an LPI

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.5.1** *P* **101** *L* **6** # 195
Wienckowski, Natalie General Motors

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

Add commas for readability.

SuggestedRemedy

Change: At the Master RS-FEC frame count of zero and all multiples of 96 RS-FEC frames thereafter denote the start of the cycle.
To: At the Master, a RS-FEC frame count of zero, and all multiples of 96 RS-FEC frames thereafter, denote the start of the cycle.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.5.1** *P* **101** *L* **13** # 196
Wienckowski, Natalie General Motors

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

The refresh signals are not exactly a half cycle off since one is at 52 and the other is at 96 RS-FEC frames.

SuggestedRemedy

Change: the refresh periods are a half cycle offset.
To: the refresh periods are about a half cycle offset.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.6.2.4** *P* **105** *L* **42** # 197
Wienckowski, Natalie General Motors

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

Hex alphabetic charcters should be capitalized.

SuggestedRemedy

Change: 0x1e
To: 0x1E
Also on page 105, line 45

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.6.2.4** *P* **105** *L* **53** # 198
Wienckowski, Natalie General Motors

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

duplicate sentence.

SuggestedRemedy

Delete on instance of: A valid O code is one containing an O code specified in Table 149–1.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.6.2.4** *P* **105** *L* **25** # 199
Wienckowski, Natalie General Motors

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

awkward wording

SuggestedRemedy

Change: belonging to the eight types
To: belonging to one of the eight types
Also on page 106, line 11

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.2.4** *P* **115** *L* **44** # 200
Wienckowski, Natalie General Motors

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

awkward wording

SuggestedRemedy

Change: This bit is set by the PHY to for the link partner to echo on Ping RX.
To: This bit is set by the PHY for the link partner to echo on Ping RX.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.2.12** *P* **117** *L* **17** # 201
Wienckowski, Natalie General Motors

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

missing period

SuggestedRemedy

Add a period at the end of the sentence.
Also on page 117, lines 24, 30, 36, 42, and 49.
Also on page 118, lines 1 and 6.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.2.13** *P* **118** *L* **14** # 202
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**
subject/verb agreement

SuggestedRemedy
Change: The RS(16, 14) parity symbols is indicated
To: The RS(16, 14) parity symbols are indicated

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.2.13** *P* **118** *L* **32** # 203
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**
missing period

SuggestedRemedy
Add a period at the end of the sentence.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.2.13** *P* **118** *L* **35** # 204
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**
missing period

SuggestedRemedy
Change: Figure 149–19 Before calculation
To: Figure 149–19. Before calculation

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.2.14** *P* **118** *L* **41** # 205
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**
missing periods

SuggestedRemedy
Add periods at the end of the a) and b) statements.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8..17** *P* **120** *L* **16** # 206
Wienckowski, Natalie General Motors

Comment Type **T** *Comment Status* **X**
It is not required that a user defined OAM message require multiple OAM messages to transmit. It is possible that the user defined OAM message fits within the 8 bytes available.

SuggestedRemedy
Change: the OAM message exchange operates on a per OAM message basis that will occur over many OAM frames.
To: the OAM message exchange operates on a per OAM message basis that may occur over many OAM frames.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.2.17** *P* **120** *L* **22** # 207
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**
missing comma

SuggestedRemedy
Change: After the link partner receives the OAM message it transfers it
To: After the link partner receives the OAM message, it transfers it

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.2.17** *P* **120** *L* **23** # 208
Wienckowski, Natalie General Motors

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

missing comma

SuggestedRemedy

Change: One OAM message can be loaded into the OAM transmit registers while another OAM message is being transmitted by the PHY to the link partner while yet another OAM message is being read out at the link partner's OAM receive registers.
To: One OAM message can be loaded into the OAM transmit registers while another OAM message is being transmitted by the PHY to the link partner, while yet another OAM message is being read out at the link partner's OAM receive registers.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.2.17** *P* **120** *L* **26** # 209
Wienckowski, Natalie General Motors

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

subject/verb agreement

SuggestedRemedy

Change: The exchange of OAM messages are occurring concurrently and bi-directionally.
To: The exchange of OAM messages is occurring concurrently and bi-directionally.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.2.17** *P* **120** *L* **27** # 210
Wienckowski, Natalie General Motors

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

missing comma

SuggestedRemedy

Change: On the transmit side mr_tx_valid = 0 indicates that the next OAM message can be written into the OAM transmit registers.
To: On the transmit side, mr_tx_valid = 0 indicates that the next OAM message can be written into the OAM transmit registers.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.2.17** *P* *L* **30** # 211
Wienckowski, Natalie General Motors

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

missing comma and subject/verb agreement

SuggestedRemedy

Change: Once the registers are written the management entity sets mr_tx_valid to 1 to indicate that the OAM transmit registers contains a valid OAM message.
To: Once the registers are written, the management entity sets mr_tx_valid to 1 to indicate that the OAM transmit registers contain a valid OAM message.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.2.17** *P* **120** *L* **33** # 212
Wienckowski, Natalie General Motors

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

missing comma

SuggestedRemedy

Change: On the receive side mr_rx_lp_valid indicates that valid OAM message can be read from the OAM receive registers.
To: On the receive side, mr_rx_lp_valid indicates that valid OAM message can be read from the OAM receive registers.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.2.17** *P* **120** *L* **35** # 213
Wienckowski, Natalie General Motors

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

missing comma

SuggestedRemedy

Change: If mr_rx_lp_valid is not cleared then the OAM
To: If mr_rx_lp_valid is not cleared, then the OAM

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.4.3** *P* **126** *L* **47** # 214
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**
missing periods

SuggestedRemedy
Add period at the end of the 0 and 1 sentences.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.4.3** *P* **127** *L* **11** # 215
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**
improve wording to match other statements

SuggestedRemedy
Change: Don’t send request to link partner…
To: Don't request link partner...

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.4.3** *P* **127** *L* **12** # 216
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**
improve wording to match other statements

SuggestedRemedy
Change: Send request to link partner…
To: Request link partner...

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.4.3** *P* **127** *L* **17** # 217
Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**
missing periods

SuggestedRemedy
Add periods at the end of all 4 "Values" sentences.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.80.2** *P* **48** *L* **38** # 218
Zimmerman, George CME:ADI,Aquantia,AP

Comment Type **T** *Comment Status* **X**
"When read as a one, bit 3.2324.9 indicates that the MultiGBASE-T1 PCS receiver is detecting a BER of > 4 × 10–4. When read as a zero, bit 3.2324.9 indicates that the MultiGBASE-T1 PCS is not detecting a BER of > 4 × 10–4."
hi_rfer doesn't really correspond well to a BER and this isn't the place to specify it. What BER hi_rfer corresponds to will depend on the interleaving. Better to rewrite this in terms of the definition of hi_rfer.

SuggestedRemedy
Change "is detecting a BER of > 4 × 10–4" to "is detecting more than 16 or more RS-FEC errored blocks in 312 500 bit times (one rfer_timer interval)"
Change "is not detecting a BER of > 4 × 10–4." to "is detecting fewer than 16 RS-FEC errored blocks in 312 500 bit times."
Delete editor's note at line 42

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.6.2.3** *P* **104** *L* **35** # 219
Zimmerman, George CME:ADI,Aquantia,AP

Comment Type **T** *Comment Status* **X**
Need to accept rfer_timer so that hi_rfer function (already accepted) works. This is not a EEE variable. The value scales with the bit rate, but not with interleaving, and relates to 312 500 bit times - for monitoring, the variation with interleaving should be acceptable.

SuggestedRemedy
Accept text in yellow at lines 35 through 39 for rfer_timer.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.6.2.5** *P* **106** *L* **47** # 220
Zimmerman, George CME:ADI,Aquantia,AP

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

Accept rfer counter logic for rfer monitor state machine. These are needed, and should not be controversial.

SuggestedRemedy

Accept text in yellow at lines 1 through 6 on page 107, delete editor's note on lines 47 through 51 on page 106.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.6.3** *P* **107** *L* **17** # 221
Zimmerman, George CME:ADI,Aquantia,AP

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

Need RFER monitor state diagram

SuggestedRemedy

Accept text in yellow on P 107 lines 17 & 18. Add figure 97-13 into the draft as the referenced "Figure 149-TBD" in line 17. Editorial license to accept and add any necessary variables, counters, functions or constants for Figure 97-13 from clause 97 into 149.3.6.2, or accept them if missed by other comments (they should all be there in yellow and in other comments)

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.6.3** *P* **107** *L* **19** # 222
Zimmerman, George CME:ADI,Aquantia,AP

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

Accept description of state diagrams

SuggestedRemedy

Accept text in yellow on page 107 lines 19 through 36 for PCS state diagrams.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.7.2** *P* **108** *L* **24** # 223
Zimmerman, George CME:ADI,Aquantia,AP

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

X-bit counter - this is a 6-bit counter, according to the description in clause 45., and the referenced figure for the RFER monitor state diagram is added by another comment.

SuggestedRemedy

Change x-bit to six bit, and
cross reference to RFER Monitor state diagram if added by the other comment.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.7.3** *P* **112** *L* **50** # 224
Zimmerman, George CME:ADI,Aquantia,AP

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

"a continuous stream of TBD encoded PAM 4 symbols" - the missing word is "RS-FEC"

SuggestedRemedy

Replace "TBD" with "RS-FEC"

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.3** *P* **135** *L* **34** # 225
Zimmerman, George CME:ADI,Aquantia,AP

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

RS-FEC error rate specification "The quality of these symbols shall allow RFER of less than TBD after RS-FEC decoding"… 10^-12 BER with an RS-FEC frame of 3260 message bits (with the errored frame replaced by error symbols) means an RFER same as the BER, or 10^-12.

SuggestedRemedy

Replace "TBD" with "10^-12" (where ^ indicates superscript)

Proposed Response *Response Status* **O**

Cl **149** SC **149.5.2.4** P **155** L **19** # 226
Zimmerman, George CME:ADI,Aquantia,AP

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

Transmit power needs to be constrained, not just less than 3 dBm. A 2 dB range has been acceptable for similar PHYs. For this speed of signal, measuring with a power meter is more appropriate. Then we can delete the peak transmit level.

SuggestedRemedy

Change "less than 3 dBm" to "in the range of 1 dBm to 3 dBm".

Proposed Response *Response Status* **O**

Cl **149** SC **149.5.2.5** P **156** L **33** # 227
Zimmerman, George CME:ADI,Aquantia,AP

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

Constraining the transmit power, the distortion and the PSD, specifying peak differential output is unneeded.

SuggestedRemedy

Delete 149.5.2.5 and content (lines 32 to 37)

Proposed Response *Response Status* **O**

Cl **149** SC **149.5.3.2** P **157** L **7** # 228
Zimmerman, George CME:ADI,Aquantia,AP

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

Need to rewrite this text so the equivalent noise is added at the MDI. See 802.3cg draft 2.3 or later. Also bandwidth is the bandwidth of the PHY signal, but the noise level will have to be determined when we get a cabling specification.

SuggestedRemedy

Change "-100 dBm/Hz" to "TBD dBm/Hz is present at the MDI of the DUT." Delete "The noise is added at the MDI of the DUT."
Add "Editor's Note - (to be removed prior to Working Group ballot) - the noise level needs to be determined jointly with adding an alien crosstalk coupling specification to the link segment."

Proposed Response *Response Status* **O**

Cl **149** SC **149.7.2** P **162** L **34** # 229
Zimmerman, George CME:ADI,Aquantia,AP

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

(there is no 149.7.2) the draft needs alien crosstalk coupling specs.

SuggestedRemedy

Insert "149.7.2 Coupling parameters between link segments." with 2 subclauses - 149.7.2.1 Power sum alien near-end crosstalk (PSANEXT), and 149.7.2.2 Power sum alien attenuation to crosstalk ratio far-end (PSAACR-F). Contents of all 3 should be "TBD".

Proposed Response *Response Status* **O**

Cl **149** SC **149.6.1** P **157** L **38** # 230
Zimmerman, George CME:ADI,Aquantia,AP

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

Remaining parameters will be communicated via infofields. List is complete at this time.

SuggestedRemedy

Delete editor's note at 157 line 38

Proposed Response *Response Status* **O**

Cl **149** SC **149.4.2.4.10** P **140** L **1** # 231
Zimmerman, George CME:ADI,Aquantia,AP

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

Text rewrite to eliminate requirements in what should be descriptive text.

SuggestedRemedy

Accept zimmerman_3cg_02_0319.pdf (TFTD)

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.2.2** P **83** L **37** # 232
Zimmerman, George CME:ADI,Aquantia,AP

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

aggregation into a superframe is not an option - it is written as if it were.

SuggestedRemedy

Change "In order to improve error correction capability, the PHY may aggregate L RS-FEC input frames into an interleaved RS-FEC input superframe."
to
"The PHY aggregates L RS-FEC input frames into an L-interleaved (L=1, 2, or 4) RS-FEC input superframe."

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.2.2.15** P **91** L **15** # 233
Zimmerman, George CME:ADI,Aquantia,AP

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

"This may be computed". "may" is a special word for "is permitted to". In this case, it is describing an implementation.

SuggestedRemedy

Change "may" to "can"

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.3** P **98** L **43** # 234
Zimmerman, George CME:ADI,Aquantia,AP

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

"however there is the possibility that the RS-FEC decoder may have corrected some errors." "may" is a special word for "is permitted to" in this case a fact is being described.

SuggestedRemedy

Change "however there is
the possibility that the RS-FEC decoder may have corrected some errors." to
"however there is
the possibility that the RS-FEC decoder corrected some errors."

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.8.2.1** P **114** L **41** # 235
Zimmerman, George CME:ADI,Aquantia,AP

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

"it may be possible". "may" means "it is permitted to" - "it is permitted to be possible" doesn't really make sense. If it is, indeed possible, "it is possible", if we are unsure, let's figure it out! (in 2 places, also on line 44)

SuggestedRemedy

Change "it may be possible" to "it is possible" on lines 41 and 44

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.8.2.15** P **119** L **48** # 236
Zimmerman, George CME:ADI,Aquantia,AP

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

"that may cause the PHY" - it appears "can cause the PHY" would be more appropriate. This is neither permission nor option. Occurs 2 times, also on line 51.

SuggestedRemedy

Change "may" to "can" on lines 48 & 51

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.4** P **98** L **47** # 237
Zimmerman, George CME:ADI,Aquantia,AP

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

"PMA training side-stream scrambler polynomials" - these are also used in data mode. They're not just for breakfast anymore.

SuggestedRemedy

Delete "PMA Training" so that the header for 149.3.4 reads "Side-stream scrambler polynomials"

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.4.5** *P* **138** *L* **42** # 238
Zimmerman, George CME:ADI,Aquantia,AP

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

"data mode precoder" - it's used in training as well. It is not just for data mode.

SuggestedRemedy

Change "data mode precoder" to "requested precoder"

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.4.5** *P* **138** *L* **41** # 239
Zimmerman, George CME:ADI,Aquantia,AP

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

The requirements for EEEen and OAM should go here in the description of the fields. These are currently in yellow in the PHY control description.

SuggestedRemedy

Insert new first 2 sentences of paragraph beginning with "Interleaver Depth…" to read ""The optional EEE capability shall be enabled only if both PHYs set the capability bit EEEen = 1. The optional BASE-T1 OAM capability shall be enabled only if both PHYs set the capability bit OAMen = 1."

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.5** *P* **150** *L* **37** # 240
Zimmerman, George CME:ADI,Aquantia,AP

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

The minwait_timer is started again in TX_SWITCH, but to no purpose, because it is not checked on exit and is started again in both possible subsequent states

SuggestedRemedy

delete "start minwait_timer" in TX_SWITCH state

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.4.1** *P* **147** *L* **3** # 241
Zimmerman, George CME:ADI,Aquantia,AP

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

Accept variables for en_slave_tx, infofield_complete, loc_phy_ready, loc_countdown_done, PMA_state, rem_countdown_done, rem_phy_ready, and sync_link_control.
Do not accept PMA_watchdog_status, as this is not used.

SuggestedRemedy

Remove highlighting from en_slave_tx, infofield_complete, loc_phy_ready, loc_countdown_done, PMA_state, rem_countdown_done, rem_phy_ready, and sync_link_control.

Delete PMA_watchdog_status at P147 L51- P148 L9

Proposed Response *Response Status* **Z**

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

Cl **149** *SC* **149.4.4.2** *P* **148** *L* **50** # 242
Zimmerman, George CME:ADI,Aquantia,AP

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

States where minwait_timer is used need to be entered and aligned with state diagram. Delete highlighted "PMA_Training_Init_S," state (this does not exist, and accept "PCS_TEST, and PCS_DATA" currently in yellow, correcting the capitalization

SuggestedRemedy

Delete highlighted "PMA_Training_Init_S," state (this does not exist, and accept "PCS_TEST, and PCS_DATA" currently in yellow, correcting the capitalization

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.5.1** *P* **152** *L* **7** # 243
Zimmerman, George CME:ADI,Aquantia,AP

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

Table 149-12 - the highlighted text is correct,

SuggestedRemedy

Remove highlighting on Test mode descriptions for modes 1, 5 and 7 in Table 149-12

Proposed Response *Response Status* **O**

Cl **149** SC **149.5.3.2** P **157** L **12** # 244
Zimmerman, George CME:ADI,Aquantia,AP

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

"frame loss ratio is less than TBD for TBD-octet packets" should be scalable directly from 1000BASE-T1 since the RS-FEC frame lengths are comparable. Since 10^-10 is the BER for 1000BASE-T1 and 10^-12 is for multigig, two orders of magnitude are needed.

SuggestedRemedy

Change "TBD for TBD-octet" to "10^-9 for 125-octet"

Proposed Response *Response Status* **O**

Cl **149** SC **149.7.1.4** P **161** L **42** # 245
ITO, HIROAKI Yazaki Corporation

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

The frequency rage for coupling attenuation is remained up to 5500MHz.

SuggestedRemedy

The frequency range for coupling noise should be changed to up to 4000MHz as well as other parameters like IL, RL.

Proposed Response *Response Status* **O**

Cl **49** SC **49.5.2.4** P **155** L **38** # 246
Wei, Dong Futurewei Technologie

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

Typo

SuggestedRemedy

Change "f is the" to "f is the"

Proposed Response *Response Status* **O**

Cl **49** SC **49.5.2.4** P **155** L **41** # 247
Wei, Dong Futurewei Technologie

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

There is no definition of variable S in equation (149-16).

SuggestedRemedy

Need to define or make a statement about the meaning of variable S meaning

Proposed Response *Response Status* **O**

Cl **149** SC **149.7.1.1** P **158** L **24** # 248
Wei, Dong Futurewei Technologie

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

Typo

SuggestedRemedy

Change "f is the" to "f is the"

Proposed Response *Response Status* **O**

Cl **149** SC **149.7.1.1** P **158** L **27** # 249
Wei, Dong Futurewei Technologie

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

Typo

SuggestedRemedy

Delete the unit of "MHz", Fmax is just the number.

Proposed Response *Response Status* **O**

Cl **149** SC **149.7.1.3** P **159** L **44** # 250
Wei, Dong Futurewei Technologie

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

Typo

SuggestedRemedy

Change "f is the" to "f is the"

Proposed Response *Response Status* **O**

Cl **149** SC **149.7.1.3** P **160** L **10** # 251
Wei, Dong Futurewei Technologie

Comment Type **ER** *Comment Status* **X**
Typo

SuggestedRemedy
Change "f is the" to "f is the"

Proposed Response *Response Status* **O**

Cl **149** SC **149.7.1.3** P **160** L **13** # 252
Wei, Dong Futurewei Technologie

Comment Type **ER** *Comment Status* **X**
typo

SuggestedRemedy
Change "N" to "N = " in the equation (149-21)

Proposed Response *Response Status* **O**

Cl **149** SC **149.7.1.3** P **160** L **30** # 253
Wei, Dong Futurewei Technologie

Comment Type **ER** *Comment Status* **X**
Typo

SuggestedRemedy
Change "f is the" to "f is the"

Proposed Response *Response Status* **O**

Cl **149** SC **149.7.1.3** P **160** L **33** # 254
Wei, Dong Futurewei Technologie

Comment Type **ER** *Comment Status* **X**
typo

SuggestedRemedy
Change "N" to "N = " in the equation (149-23)

Proposed Response *Response Status* **O**

Cl **149** SC **149.7.1.3** P **160** L **38** # 255
Wei, Dong Futurewei Technologie

Comment Type **ER** *Comment Status* **X**
typo

SuggestedRemedy
Change "N=1" to "N=1" in the equation (149-23)

Proposed Response *Response Status* **O**

Cl **149** SC **149.7.1.4** P **161** L **42** # 256
Wei, Dong Futurewei Technologie

Comment Type **ER** *Comment Status* **X**
Typo

SuggestedRemedy
Change "f is the" to "f is the"

Proposed Response *Response Status* **O**

Cl **149** SC **149.8.2.1** P **163** L **12** # 257
Wei, Dong Futurewei Technologie

Comment Type **ER** *Comment Status* **X**
Typo

SuggestedRemedy
Change "f is the" to "f is the"

Proposed Response *Response Status* **O**

Cl **149** SC **149.8.2.1** P **163** L **15** # 258
Wei, Dong Futurewei Technologie

Comment Type **ER** *Comment Status* **X**
Typo

SuggestedRemedy
Change "4000 MHz × S" to "4000 × S MHz"

Proposed Response *Response Status* **O**

Cl **98B** SC **98B.3** P **168** L **24** # 259
Wei, Dong Futurewei Technologie

Comment Type **ER** *Comment Status* **X**
Typo

SuggestedRemedy
Change "A6through" to "A6 through"

Proposed Response *Response Status* **O**

Cl **149A** SC **149A.2** P **169** L **26** # 260
Wei, Dong Futurewei Technologie

Comment Type **ER** *Comment Status* **X**
Typo

SuggestedRemedy
Change "23°C ± 5°C" to "23 ± 5°C"

Proposed Response *Response Status* **O**

Cl **149A** SC **149A.4** P **170** L **33** # 261
Wei, Dong Futurewei Technologie

Comment Type **ER** *Comment Status* **X**
Typo

SuggestedRemedy
Change "Testfixture" to "Test Fixture"

Proposed Response *Response Status* **O**

Cl **149** SC **149.1.3.3** P **69** L **25** # 262
Wei, Dong Futurewei Technologie

Comment Type **ER** *Comment Status* **X**
Repeat statement

SuggestedRemedy
Delete the sentence:"The PMA Transmit function in the PHY then sends an alert message to the link partner" in line 25~26

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.2.2.16** P **93** L **33** # 263
Wei, Dong Futurewei Technologie

Comment Type **ER** *Comment Status* **X**
Repeat statement

SuggestedRemedy
Delete the repeat statement of line 33-37, which are the same as line 27-31

Proposed Response *Response Status* **O**

Cl **149** SC **149.4.2.1** P **135** L **4** # 264
Wei, Dong Futurewei Technologie

Comment Type **ER** *Comment Status* **X**
Typo

SuggestedRemedy
Change "true.All" to "true. All", just add one space.

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.2.2.15** P **90** L **39** # 265
Wei, Dong Futurewei Technologie

Comment Type **ER** *Comment Status* **X**
Just shows half g of g(x), and half 0 of g0 in Equation (149-1)

SuggestedRemedy
Zoom out a little bit for the equation (149-1) to show the full equation.

Proposed Response *Response Status* **O**

Cl **149** SC **149.3.2.2.16** P **94** L **19** # 266
Wei, Dong Futurewei Technologie

Comment Type **ER** *Comment Status* **X**
Typo

SuggestedRemedy
Change "mL" to "m0"; Figure 149-10, at the RS Encoder #L, the input and output mL should be m0.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.4.2** *P* **148** *L* **45** # 267
WU, Peter Marvell

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

Maxwait_timer expiartion period should be much shorten than 2000ms with 100ms link up requirement

SuggestedRemedy

Change "2000ms+/-10ms" to "97.5ms+/-0.5ms"

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.4.2** *P* **148** *L* **50** # 268
WU, Peter Marvell

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

minwait_timer expiartion period changed to the same value used at 802.3bp

SuggestedRemedy

change "1ms+0.1s" to "975us+/-50us"

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.5.1** *P* **154** *L* **27** # 269
WU, Peter Marvell

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

Figure 149-36 with wrong piece copied

SuggestedRemedy

remove the block of " link partner" in the figure

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.4** *P* **148** *L* **1** # 270
WU, Peter Marvell

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

"PAM3 " are still used in pma_Watchdog_status definiiton text and expiration times should be changed as well

SuggestedRemedy

change "OK: the local device has received sufficient PAM3 transitions□
NOT_OK: the local device has not received sufficient PAM3 transitions□
During normal operation NOT_OK is assigned when:
— PAM3 symbol 0 consecutively seen on the line for longer than 2 µs ± 0.1 µs
— PAM3 symbol +1 consecutively seen on the line for longer than 3.9 µs ± 0.1 µs
— PAM3 symbol –1 consecutively seen on the line for longer than 3.9 µs ± 0.1 µs
During Low Power Idle operation NOT_OK is assigned when:
— PAM3 symbol not togglin g on the line during one full refresh window"
to
"OK: the local device has received sufficient PAM4 transitions□
NOT_OK: the local device has not received sufficient PAM4 transitions□
During normal operation NOT_OK is assigned when:
— PAM4 symbol +3 consecutively seen on the line for longer than 1.9 µs ± 0.1 µs
— PAM4 symbol +1 consecutively seen on the line for longer than 1.9 µs ± 0.1 µs
— PAM4 symbol -1 consecutively seen on the line for longer than 1.9 µs ± 0.1 µs
— PAM4 symbol –3 consecutively seen on the line for longer than 1.9 µs ± 0.1 µs
During Low Power Idle operation NOT_OK is assigned when:
— PAM4 symbol not toggling on the line during one full refresh window"
The timers expire all at 1.9us +/- 0.1us

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.4** *P* **148** *L* **14** # 271
WU, Peter Marvell

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

PAM3 stilll used

SuggestedRemedy

change "PAM3" to "PAM4"

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.5.2.6** *P* **156** *L* **40** # 272

WU, Peter Marvell

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

The clock is still defined for 2.5G-T1,

SuggestedRemedy

change "1406.25 MHz ± 50 ppm"
to "5625*S MHz± 50 ppm"

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.4.1** *P* **147** *L* **3** # 273

Zimmerman, George CME:ADI,Aquantia,AP

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

Accept variables for en_slave_tx, infofield_complete, loc_countdown_done, PMA_state, rem_countdown_done, and sync_link_control.
Do not accept PMA_watchdog_status, loc_phy_ready, and rem_phy_ready as these are not used.

SuggestedRemedy

Remove highlighting from en_slave_tx, infofield_complete, loc_countdown_done, PMA_state, rem_countdown_done, and sync_link_control.

Delete PMA_watchdog_status at P147 L51- P148 L9
Delete loc_phy_ready at P147 L18-26
Delete rem_phy_ready at P148 L14-21

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **79** *L* **27** # 274

Zimmerman, George CME:ADI,Aquantia,AP

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

Delete references to unused loc_phy_ready and rem_phy_ready in in the primitives section, in Figures 149-2, 149-4, and 149-24, and in the variables of PHY Control 149.4.4.1. PHY control uses loc_rcvr_status instead of loc_phy_ready and rem_phy_ready

SuggestedRemedy

In Figure 149-2 (P71): Delete loc_phy_ready from PMA RECEIVE to PCS TRANSMIT, and rem_phy_ready (just the label, not the arc) from PCS RECEIVE to PHY CONTROL (this arc also has the label rem_rcvr_status, which should remain)

149.2.2 P74 L26, Delete primitives PMA_PHYREADY.indication(loc_phy_ready) and on P74 L28 delete PMA_REMPHYREADY.request (rem_phy_ready)

149.2.2.8 Delete 149.2.2.8 and subclauses 149.2.2.8.1 and 149.2.2.8.2 (P79 L1-22)

149.2.2.10 Delete P80 L1 - 28, Editor's note and 149.2.2.10 PMA_REMPHYREADY.request and subclauses.

In Figure 149-4 (PCS reference diagram, P82 L23), Delete loc_phy_ready input to PCS TRANSMIT from PMA SERVICE INTERFACE. Change label on output from PCS RECEIVE to PMA SERVICE INTERFACE from "rem_rcvr_status/rem_phy_ready" to "rem_rcvr_status".

In Figure 149-24 (PMA reference diagram, P134 L7) delete the first solid line output from PMA RECEVE to PMA SERVICE INTERFACE and label "loc_phy_ready", and change able on rightmost input (2nd from right line) to PHY CONTROL from PMA SERVICE INTERFACE from "rem_rcvr_status/rem_phy_ready" to "rem_rcvr_status"

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.5.2.5** *P* **156** *L* **35** # 275

Souvignier, Tom Broadcom

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

Max transmitter peak differential output of 1.2V. 20% over nominal to allow for process and design variation.

SuggestedRemedy

Replace “TBD” with “0.2”

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.2.2** *P* **80** *L* **3** # 276

McClellan, Brett Marvell

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

I believe this editor's note refers to a special GMII codeword defined and used in Clause 97 only for the purpose of signaling PMA_PHYREADY.indication (loc_phy_ready) to the link partner.
For Clause 97, Idle was split into two different codewords, one for loc_phy_ready = NOT_OK and one for loc_phy_ready = OK.
This points out a problem in the current CH draft.
149.2.2.8 PMA_PHYREADY.indication definition states that "loc_phy_ready is conveyed to the link partner by the PCS as defined in 149.4.4.1."
149.4.4.1 then points back to Table 149-1, "This variable is conveyed to the link partner by the PCS as defined in Table 149–1."
However, Table 149-1 has no codeword to convey loc_phy_ready. loc_phy_ready was created in BP to prevent either side from transmitting frames until both sides are ready. loc_phy_ready is unnecessary for XGMII based PHYs and currently it isn't used in the PMA PHY control state machine. Normal ordered sets of Local Fault and Remote Fault from the Reconciliation Sublayer perform the function of holding off frames until both PHYs are ready.

SuggestedRemedy

Remove the editor's note.
Remove the primitive PMA_PHYREADY.indication and any text and figure references related to loc_phy_ready.
Remove the primitive PMA_REMPHYREADY.request and any text and figure references related to rem_phy_ready.
Remove loc_phy_ready definition from 149.4.4.1 State diagram variables.
Remove rem_phy_ready definition from 149.4.4.1 State diagram variables.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.3** *P* **97** *L* **38** # 277

McClellan, Brett Marvell

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

according to 149.3.4.1, alignment bits are placed every 450 symbols.

SuggestedRemedy

Change 80 to 450.

Proposed Response *Response Status* **O**

Cl **Introdu** *SC* **Introduction** *P* **11** *L* **5** # 278

den Besten, Gerrit NXP Semiconductors

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

"for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation on automotive cabling in an automotive application."

SuggestedRemedy

replace by: "for operation at 2.5Gb/s, 5Gb/s, and 10Gb/ over single shielded balanced pair of conductors."

Proposed Response *Response Status* **O**

Cl **Page** *SC* **Title page** *P* **21** *L* **1** # 279

den Besten, Gerrit NXP Semiconductors

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

"2019Draft" The 2019 seems not to belong here.

SuggestedRemedy

Replace by "Draft"

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4** *P* **22** *L* **17** # 280

den Besten, Gerrit NXP Semiconductors

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

"over a single shielded balanced pair of conductors". Signal routing at PCB might not be shielded. Same on lines 23 and 29.

SuggestedRemedy

Replace by: "over a single balanced pair of conductors using shielded cabling."

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.5.1.1.2** *P* **24** *L* **12** # 281
den Besten, Gerrit NXP Semiconductors

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

"Single shielded balanced pair of conductors PHY". Signal routing at PCB might not be shielded. Same on lines 18 and 23. Recommend to search for "single shielded balanced pair" as this occurs at more places in the spec.

SuggestedRemedy

Replace by: "Single balanced pair of conductors PHY using shielded cabling."

Proposed Response *Response Status* **O**

Cl **44** *SC* **44.1.3** *P* **27** *L* **41** # 282
den Besten, Gerrit NXP Semiconductors

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

Figure 44.1 shows "WIS = WAN INTERFACE SUBLAYER" inside the lower diagram of the figure, and not in the list below. This is confusing because WIS does not occur in that lower diagram.

SuggestedRemedy

Move the definition: "WIS = WAN INTERFACE SUBLAYER" to the list below the figure.

Proposed Response *Response Status* **O**

Cl **44** *SC* **44.1.4.4** *P* **29** *L* **10** # 283
den Besten, Gerrit NXP Semiconductors

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

"1-pair RS–FEC PCS & PMA" Inconsistent with 10GBASE-T.

SuggestedRemedy

Change to "RS-FEC PCS & 1-pair PMA"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.192.1** *P* **34** *L* **29** # 284
den Besten, Gerrit NXP Semiconductors

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

"The control and management interface shall be restored to operation within 0.5 s from the setting of bit 1.2309.15"

SuggestedRemedy

Replace by: "The control and management interface shall be restored to operation within max_reset_time as defined in 149.x.x, starting when bit 1.2309.15 is set."

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.197** *P* **40** *L* **10** # 285
den Besten, Gerrit NXP Semiconductors

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

SNR operating margin as currently proposed in the draft is essentially an 8 bit value (255 used values), but it is defined as a 16bit register with 0x8000 as zero dB reference.This is very inefficient as all 16 bits would be toggling between values 0.0dB and -0.1dB.

SuggestedRemedy

Represent the 8-bit SNR margin in bits 7:0 of register 2314, with 0x80 as zero reference for that field.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.198** *P* **40** *L* **17** # 286
den Besten, Gerrit NXP Semiconductors

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

minimum SNR margin as currently proposed in the draft is essentially an 8 bit value (255 used values), but it is defined as a 16bit register with 0x8000 as zero dB reference.This is very inefficient as the upper 8 bits would be toggling between values 0.0dB and -0.1dB, but they don't contain information.

SuggestedRemedy

Represent the 8-bit minimum SNR margin in bits 15:8 of register 2314, with 0x80 as zero reference for that field. Free-up register 2315.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.198** *P* **40** *L* **13** # 287

den Besten, Gerrit NXP Semiconductors

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

Register 231 is callled minimum margin register, but it is about an SNR valy

SuggestedRemedy

Rename to: minimum SNR margin

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.2.1** *P* **114** *L* # 288

den Besten, Gerrit NXP Semiconductors

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

I understand the benefit of an separate RS code to protect OAM bytes during LPI mode. However it should be noted that EEE is optional. It doesn't make sense to me that the OAM data during normal operation would be double RS encoded as it is already protected by the regular RS-FEC frame. Therefore I propose to make the OAM RS optional for normal operation.

SuggestedRemedy

I propose to only use the (16,14,10) RS coding for OAM during refreshing and not during normal operation. At least this should not be mandated. During normal operation the OAM bytes are already protected by the RS(360,324,10) scheme. We intentionally selected an RS scheme where one byte was left over for OAM. A transceiver with EEE still can double RS encode the OAM all the time, but an PHY that does not support EEE should not be required to add this additional coding without any purpose. In order to keep it simple with a 16 byte scheme, the last two bytes will be reserved in normal operation, and be transmitted as zero.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.3** *P* **135** *L* **34** # 289

den Besten, Gerrit NXP Semiconductors

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

TBD

SuggestedRemedy

1.00E-09

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.5.2.4** *P* **155** *L* **24** # 290

den Besten, Gerrit NXP Semiconductors

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

The current transmit PSD mask practically not providing any constraint to the signaling. With the current limits this does not add any value except for being a complicated way to define the signal swing.

SuggestedRemedy

I will make a separate presentation with a proposal for an updated mask.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.5.2.5** *P* **156** *L* **35** # 291

den Besten, Gerrit NXP Semiconductors

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

TBD

SuggestedRemedy

Propose to make this 1.3Vppd, like 1000BASE-T1

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.8.2.2** *P* **163** *L* **46** # 292

den Besten, Gerrit NXP Semiconductors

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

We reached consensus on coupling and shielding attenuation, but the paragraph on the first topic is empty and the paragraph about the second doesn't exist yet.

SuggestedRemedy

Need to add the limit formulas and graph on coupling attenuation to this paragraph. Need to add an paragraph in shielding attenuation. I would be happy to provide editorial assist on the wording.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.192.3** *P* **35** *L* **18** # 293
den Besten, Gerrit NXP Semiconductors

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

"The data path of the MultiGBASE-T1 PMA, depending on type and temperature, may take many seconds to run at optimum error ratio after exiting from reset or lowpower mode."

SuggestedRemedy

"The data path of the MultiGBASE-T1 PMA may take max_startup_time as defined in 149.x.x. to resume operation and achieve the required BER after exiting from reset or low-power mode."

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.1** *P* **135** *L* **4** # 294
den Besten, Gerrit NXP Semiconductors

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

"true.All"

SuggestedRemedy

Add space

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.4.2.1** *P* **137** *L* **7** # 295
den Besten, Gerrit NXP Semiconductors

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

Timing specs for PMA reset are missing.

SuggestedRemedy

Insert the following paragraph:
The reset shall take less than 10ms (=max_reset_time), and register access shall be available again after that. The link shall resume operation and achieve the required BER within 100ms (=max_training_time)

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.1** *P* **82** *L* **45** # 296
den Besten, Gerrit NXP Semiconductors

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

Timing specs for PCS reset are missing.

SuggestedRemedy

Insert the following paragraph:
The reset shall take less than 10ms (=max_reset_time), and register access shall be available again after that. The link shall resume operation and achieve the required BER within 100ms (=max_training_time)

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.197** *P* **40** *L* **10** # 297
den Besten, Gerrit NXP Semiconductors

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

How is SNR operating margin defined? We currently don't have a pre-FEC (raw) BER target in the spec.The BER < 1e-12 is post-FEC. So what does 0dB mean here?

SuggestedRemedy

I see three possible solutions here:
a) Define a pre-FEC BER target, which will implicilty set a reference SNR level for the SNR margin
b) Define a fixed reference SNR pre-FEC
c) Report the actual SNR pre-FEC and don't talk about 'margin'. In the latter case the SNR register value becomes strictly positive.

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.74.2** *P* **43** *L* **41** # 298
den Besten, Gerrit NXP Semiconductors

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

asociate: missing d

SuggestedRemedy

asociated

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.74.1** *P* **43** *L* **36** # 299

den Besten, Gerrit NXP Semiconductors

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

"This register shall be cleared when register 3.2317 is read." However, the last OAM byte is in register 2319. So it looks like only the first 8 bytes of the message are handshaked. Furthermore the addition of these extra 4 bytes is a bit messy as they are not directly concatenated to the existing 8 bytes in the register map.

SuggestedRemedy

Refer to register 3.2319 in the quoted sentence

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.78.1** *P* **46** *L* **14** # 300

den Besten, Gerrit NXP Semiconductors

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

"The control and management interface shall be restored to operation within 0.5 s from the setting of bit 3.2322.15."

SuggestedRemedy

Replace by: ""The control and management interface shall be restored to operation within max_reset_time as defined in 149.x.x, starting when bit 3.2322.15 is set."

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.80.2** *P* **48** *L* **36** # 301

den Besten, Gerrit NXP Semiconductors

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

"PCS high BER": The way it is currently defined is not a BER but a RFER (reed-solomon frame-error-rate) as only frames which cannot be corrected are counted.

SuggestedRemedy

Rename to Frame Error Rate (FER)

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.3.80.2** *P* **48** *L* **39** # 302

den Besten, Gerrit NXP Semiconductors

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

The spec text "detecting a BER of > 4e-4" is ambiguous, because actually the frame errors are counted here, not bit errors. Furthermore this number seems way too high. Bit errors at PMA level will mostly be successfully corrected by the RS-FEC, or corrupt a whole RS frame. Counting the number of erroneous RS frames seems the correct approach, but why would we express this as BER instead of RFER? Note that the RFER counter is only 6 bits so apparently this not supposed to happen very often. For a RFER<1e-9 the packet level performance is similar to a transmission scheme without RS-FEC and a PMA BER of about 3e-11.

SuggestedRemedy

Propose to change into: "detecting a RFER > 1e-9

Proposed Response *Response Status* **O**

Cl **104** *SC* **104.5.6.4** *P* **59** *L* **15** # 303

den Besten, Gerrit NXP Semiconductors

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

Type F has been added to the sub-clause, but there is no reference to clause 149 in there. Especially in this sentence that was apparently there for 1000BASE-T1 with reference to the MDI return loss, it seems that just adding Type F in there is not sufficient.

SuggestedRemedy

Change:
"The ripple and transient specifications for a Type B or Type F PD shall be met for all operating voltages in the range of VPD sourced through a dc bias coupling network with MDI return loss as specified by Clause 97, and over the range of PPD."
into:
"The ripple and transient specifications for a Type B PD shall be met for all operating voltages in the range of VPD sourced through a dc bias coupling network with MDI return loss as specified by Clause 97, and over the range of PPD..... The ripple and transient specifications for a Type F PD shall be met for all operating voltages in the range of VPD sourced through a dc bias coupling network with MDI return loss as specified by Clause 149, and over the range of PPD."

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.2.2.19** *P* **95** *L* **43** # 304

den Besten, Gerrit NXP Semiconductors

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

PAM2 versus PAM4 during refreshes

SuggestedRemedy

In order to keep things as simple as possible in EEE mode, I would recommend to go for PAM2 here, so no pre-coder during refreshes.

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.4.1** *P* **99** *L* **37** # 305

den Besten, Gerrit NXP Semiconductors

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

"alignment to the RS-FEC block and the 16 partial PHY frames that comprise the block" "block" is confusing here as block is used in the context of 64B/65B block encoding. What is meant here is PAM2 training sequence with the length of 4 RS frames. I think this is called super-frame.

SuggestedRemedy

Replace by: "alignment to the RS-FEC super-frame comprising 16 partial PHY frames"

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.7.3** *P* **112** *L* **50** # 306

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

TBD

SuggestedRemedy

Replace "TBD encoded" with "encoded transmit data"

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.2.13** *P* **118** *L* **35** # 307

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

Period missing after "Figure 149–19"

SuggestedRemedy

Add period

Proposed Response *Response Status* **O**

Cl **149** *SC* **149.3.8.2.1** *P* **114** *L* **38** # 308

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

"full OAM frame can packed into 8 super frames in the 2x interleave mode, and into 4 super frames in the 4x interleave mode"

SuggestedRemedy

"full OAM frame can be packed into 8 super frames in the 2x interleaved mode, and into 4 super frames in the 4x interleaved mode"

Proposed Response *Response Status* **O**