Cl	*SC* **45.2.1.199**	*P* **42**	*L* **28**	*#* 167

McClellan, Brett   Marvell

Comment Type **TR**   *Comment Status* **A**   *Vendor*

The use of the vendor specific messages is beyond the scope of this standard, so why is there a restriction that they may only be used by devices from the same vendor?

SuggestedRemedy

lines 28 and 31
delete 'when the link partner is from the same vendor '

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This text is removed as rewritten by comment #1.

Cl **FM**	*SC*	*P* **2**	*L* **5**	*#* 40

Marris, Arthur   Cadence Design Systems

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

"This amendment to IEEE Std 802.3-2018 adds physical layer specifications and management parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation on a single balanced pair of conductors suitable for applications." does not read right

SuggestedRemedy

Change to:
"This amendment to IEEE Std 802.3-2018 adds physical layer specifications and management parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s operation on a single balanced pair of conductors suitable for automotive applications."

Response   *Response Status* **C**

ACCEPT.

Cl **FM**	*SC*	*P* **22**	*L* **6**	*#* 41

Marris, Arthur   Cadence Design Systems

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

Title is wrong.

SuggestedRemedy

Change title to:
"Draft Standard for Ethernet Amendment:
Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s and 10 Gb/s Automotive Electrical Ethernet"

Also consider changing page headers to something other than "IEEE P802.3ch Multi-Gig Automotive Ethernet PHY Task Force"
perhaps change to: "IEEE P802.3ch Task Force: Physical Layer Specifications and Management Parameters for 2.5 Gb/s, 5 Gb/s and 10 Gb/s Automotive Electrical Ethernet"

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change title to match the first page adding missing comma: "Draft Standard for Ethernet Amendment:
Physical Layer draftifications and Management Parameters for 2.5 Gb/s, 5 Gb/s, and 10 Gb/s Automotive Electrical Ethernet"
Don't change the page header as it is supposed to be the Task Force name.

Cl **FM**	*SC* **FM**	*P* **10**	*L* **48**	*#* 57

Wienckowski, Natalie   General Motors

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

IEEE Std 802.3cn-20xx - Amendment 4

SuggestedRemedy

Add: IEEE Std 802.3cn™-20xx
Amendment 4—This amendment includes changes to IEEE Std 802.3-2018 and adds 50 Gb/s, 200 Gb/s, and 400 Gb/s Physical Layer specifications and management parameters for operation over single-mode fiber with reaches of at least 40 km.

Response   *Response Status* **C**

ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Clause, Subclause, page, line

Cl **FM**   Page 1 of 45
SC **FM**   9/12/2019 2:11:15 PM

Cl **FM**	*SC* **FM**	*P* **10**	*L* **51**	# 58

Wienckowski, Natalie   General Motors

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

IEEE Std 802.3cg-20xx - Amendment 5

SuggestedRemedy

Add: Amendment 5— after the title for cg and before "This amendment"

Response   *Response Status* **C**

ACCEPT.

Cl **FM**	*SC* **FM**	*P* **11**	*L* **4**	# 37

Wienckowski, Natalie   General Motors

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

Missing 149C in the description of the ammendment.

SuggestedRemedy

Change: adds Clause 149 and Annex 149A and Annex 149B.
To: adds Clause 149 and Annex 149A, Annex 149B, and Annex 149C.

Response   *Response Status* **C**

ACCEPT.

Cl **FM**	*SC* **FM**	*P* **11**	*L* **6**	# 59

Wienckowski, Natalie   General Motors

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

IEEE Std 802.3cq-20xx - Amendment 6

SuggestedRemedy

Add: IEEE Std 802.3cq™-20xx
Amendment 6—This amendment includes editorial and technical corrections, refinements, and clarifications to Clause 33 and related portions of the standard.

Response   *Response Status* **C**

ACCEPT.

Cl **FM**	*SC* **FM**	*P* **11**	*L* **6**	# 60

Wienckowski, Natalie   General Motors

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

IEEE Std 802.3cm-20xx - Amendment 7

SuggestedRemedy

Add: IEEE Std 802.3cm™-20xx
Amendment 7—This amendment includes changes to IEEE Std 802.3-2018 and adds Clause 150. This amendment adds
Physical Layer (PHY) specifications and management parameters for 400 Gb/s operation on four pairs (400GBASE-SR4.2) and eight pairs (400GBASE-SR8) of multimode fiber, over reaches of at least
100 m.

Response   *Response Status* **C**

ACCEPT.

Cl **00**	*SC* **0**	*P* **1**	*L* **18**	# 64

Maguire, Valerie   The Siemon Company

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

Use oxford comma.

SuggestedRemedy

Replace, "2.5 Gb/s, 5 Gb/s and 10 Gb/s" with "2.5 Gb/s, 5 Gb/s, and 10 Gb/s".

Response   *Response Status* **C**

ACCEPT.

Cl **00**	*SC* **0**	*P* **10**	*L* **47**	# 117

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

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

There are multiple amendments missing from the front matter (802.3cn, 802.3cq, and soon 802.3cm) which are now in SA ballot. 802.3cn is now Amendment four, before 802.3cg, as well.

SuggestedRemedy

Insert missing amendments in correct order in front matter

Response   *Response Status* **C**

ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **00**   Page 2 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **0**   9/12/2019 2:11:21 PM
SORT ORDER: Clause, Subclause, page, line

Cl **44**	*SC* **44.1.3**	*P* **28**	*L* **50**	# 118

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

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

* AUTO-NEGOTIATION IS OPTIONAL should read 'for 10GBASE-T1' otherwise the asterisk looks like a general comment on auto-negotiation rather than specific to the 10GBASE-T1 stack

SuggestedRemedy

add "FOR 10GBASE-T1" after "AUTO-NEGOTIATION IS OPTIONAL"

Proposed Response   *Response Status*   **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **44**	*SC* **44.1.4.4**	*P* **30**	*L* **43**	# 66

Tu, Mike   Broadcom

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

I think "gray code" should be "Gray code".

SuggestedRemedy

Change "gray code" to "Gray code"

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch 2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Change "gray code" to "Gray-code" as "Gray" is based on a name and this is how it is written in this and other Clauses.

Cl **45**	*SC* **45.2.1**	*P* **32**	*L* **29**	# 120

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

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

"Minimum SNR margin" - Minimum should not be capitalized (it isn't the first word or an acronym)

SuggestedRemedy

Change Minimum to minimum.

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make suggested change to follow IEEE802.3 style.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **45**   Page 3 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **45.2.1**   9/12/2019 2:11:21 PM
SORT ORDER: Clause, Subclause, page, line

Cl **45**	*SC* **45.2.1**	*P* **32**	*L* **30**	# 119

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

Comment Type **E**   *Comment Status* **A**   *Vendor*

"PHY Vendor specific" and "Link Partner vendor specific data" isn't a specific enough name for these registers, in the context of clause 45. These registers are specific to MultiGBASE-T1. As labeled, they look like general registers for ANY 802.3 PHY type. Suggest change name to "MultiGBASE-T1 PHY vendor specific data" and "MultiGBASE-T1 link partner PHY vendor specific data". Note also capitalization and alignment of the link partner register name

SuggestedRemedy

Change as per comment. Also change names in 45.2.1.199 and table 45-155f

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Resolved by the response to comment 1, copied below.

In Table 45-3:
Change the name of register 1.2316 to "MultiGBASE-T1 user defined data" in subclause 45.2.1.199
Change the name of register 1.2317 to "MultiGBASE-T1 link partner user defined data" in subclause 45.2.1.200
In 45.2.1.199:
Change the title to "MultiGBASE-T1 user defined data register (Register 1.2316)"
Change the text to: "The assignment of bits for the MultiGBASE-T1 user defined data register is shown in Table 45–155f. The values of the bits in this register are outside the scope of this standard."
In Table 45-155f:
Change the title to: "MultiGBASE-T1 user defined data register bit definitions"
Change the Name to: "MultiGBASE-T1 user defined data"
Change the Description to: "16 bits of vendor specific data that the PHY sends to its link partner"
Delete the last row of the table.
Change footnote a to "R/W = Read/Write"
In 45.2.1.199.1:
Change the title to: "PHY vendor specific data (1.2316.15:0)"
Change text to: "Bits 1.2316.15:0 contain vendor specific data that the PHY may communicate to its link partner during training."
Delete 45.2.1.199.2
Create a new level 4 subclause:
"45.2.1.200 MultiGBASE-T1 link partner user defined data register (Register 1.2317)" with text:
"The assignment of bits for the MultiGBASE-T1 link partner user defined data register is shown in Table 45–155g. The values of the bits in this register are outside the scope of this standard."
Create Table 45-155g with title "MultiGBASE-T1 link partner user defined data register bit definitions" and a row with Name entry for 1.2317.15:0 is "Link partner PHY vendor specific

data", Description is "16 bits of vendor specific data that the PHY may receive from its link partner", R/W is "RO", and footnote a is "RO = Read only"
Create a new level 5 subclause:
"45.2.1.200.1 Link partner PHY vendor specific data (1.2317.15:0)" with text "Bits 1.2317.15:0 contain vendor specific data that the PHY may receive from its link partner during training."

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Clause, Subclause, page, line

Cl **45**   Page 4 of 45
SC **45.2.1**   9/12/2019 2:11:21 PM

Cl **45**	*SC* **45.2.1**	*P* **32**	*L* **31**	# 1

Anslow, Pete   Ciena

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

The definition of registers 1.2316 and 1.2317 is not being done in accordance with Clause 45 conventions or in keeping with "user defined data" as used in prior BASE-T PHYs.
The names of the registers are such that when this amendment has been applied to the base standard it will not be clear what they are for.

SuggestedRemedy

In Table 45-3:
Change the name of register 1.2316 to "MultiGBASE-T1 user defined data" in subclause 45.2.1.199
Change the name of register 1.2317 to "MultiGBASE-T1 link partner user defined data" in subclause 45.2.1.200
In 45.2.1.199:
Change the title to "MultiGBASE-T1 user defined data register (Register 1.2316)"
Change the text to: "The assignment of bits for the MultiGBASE-T1 user defined data register is shown in Table 45–155f. The values of the bits in this register are all zeros unless the PHY identifies the link partner during Auto-Negotiation through communicating OUIs using the NEXT pages."
In Table 45-155f:
Change the title to: "MultiGBASE-T1 user defined data register bit definitions"
Delete the last row of the table.
Change footnote a to "R/W = Read/Write"
In 45.2.1.199.1:
Change the title to: "PHY vendor specific data (1.2316.15:0)"
Delete 45.2.1.199.2
Create a new level 4 subclause:
"45.2.1.200 MultiGBASE-T1 link partner user defined data register (Register 1.2317)" with text:
"The assignment of bits for the MultiGBASE-T1 link partner user defined data register is shown in Table 45–155g. The values of the bits in this register are all zeros unless the PHY identifies the link partner during Auto-Negotiation through communicating OUIs using the NEXT pages."
Create Table 45-155g with title "MultiGBASE-T1 link partner user defined data register bit definitions" and a body the same as the last row of Table 45-155f except that the Name entry for 1.2317.15:0 is "Link partner PHY vendor specific data" and footnote a is "RO = Read only"
Create a new level 5 subclause:
"45.2.1.200.1 Link partner PHY vendor specific data (1.2317.15:0)" with text as per the existing 45.2.1.199.2.

Response	*Response Status* **C**

ACCEPT IN PRINCIPLE.

In Table 45-3:
Change the name of register 1.2316 to "MultiGBASE-T1 user defined data" in subclause 45.2.1.199

Change the name of register 1.2317 to "MultiGBASE-T1 link partner user defined data" in subclause 45.2.1.200
In 45.2.1.199:
Change the title to "MultiGBASE-T1 user defined data register (Register 1.2316)"
Change the text to: "The assignment of bits for the MultiGBASE-T1 user defined data register is shown in Table 45–155f. The values of the bits in this register are outside the scope of this standard."
In Table 45-155f:
Change the title to: "MultiGBASE-T1 user defined data register bit definitions"
Change the Name to: "MultiGBASE-T1 user defined data"
Change the Description to: "16 bits of vendor specific data that the PHY sends to its link partner"
Delete the last row of the table.
Change footnote a to "R/W = Read/Write"
In 45.2.1.199.1:
Change the title to: "PHY vendor specific data (1.2316.15:0)"
Change text to: "Bits 1.2316.15:0 contain vendor specific data that the PHY may communicate to its link partner during training."
Delete 45.2.1.199.2
Create a new level 4 subclause:
"45.2.1.200 MultiGBASE-T1 link partner user defined data register (Register 1.2317)" with text:
"The assignment of bits for the MultiGBASE-T1 link partner user defined data register is shown in Table 45–155g. The values of the bits in this register are outside the scope of this standard."
Create Table 45-155g with title "MultiGBASE-T1 link partner user defined data register bit definitions" and a row with Name entry for 1.2317.15:0 is "Link partner PHY vendor specific data", Description is "16 bits of vendor specific data that the PHY may receive from its link partner", R/W is "RO", and footnote a is "RO = Read only"
Create a new level 5 subclause:
"45.2.1.200.1 Link partner PHY vendor specific data (1.2317.15:0)" with text "Bits 1.2317.15:0 contain vendor specific data that the PHY may receive from its link partner during training."

Cl **45**	*SC* **45.2.1.7.4**	*P* **33**	*L* **5**	# 2

Anslow, Pete   Ciena

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

The empty rows in Table 45-9 and Table 45-10 should contain an ellipsis

SuggestedRemedy

Add an ellipsis to the empty rows (two instances per table)

Response	*Response Status* **C**

ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **45**   Page 5 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **45.2.1.7.4**   9/12/2019 2:11:21 PM
SORT ORDER: Clause, Subclause, page, line

Cl **45**	*SC* **45.2.1.7.5**	*P* **33**	*L* **3**	*#* 121

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

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

PHY names should not break across lines.

SuggestedRemedy

Widen first column of Tables 45-9 and 45-10 and use non-breaking hyphens in BASE-T1 instances. (do both - this way no matter what happens in the future, PHY names won't break across lines.)

Response   *Response Status* **C**

ACCEPT.

Cl **45**	*SC* **45.2.1.18**	*P* **34**	*L* **24**	*#* 3

Anslow, Pete   Ciena

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

"Add" is not a valid editing instruction.
Table 45-21 is not being changed, so should not be shown.
Notes should use the paragraph tag "Note"

SuggestedRemedy

Change the editing instruction to: "Insert the following note below Table 45-21:"
Delete Table 45-21.
Apply Paragraph tag "Note" to the note.

Response   *Response Status* **C**

ACCEPT.

Cl **45**	*SC* **45.2.1.192**	*P* **35**	*L* **41**	*#* 124

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

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

the changes to allow the user to set precoder selection and the reporting of the link monitor's precoder request have made these registers confusing and duplicate. They are now better delegated to just control the test mode precoder forcing, since the user can force his precoder from the remote device. For testing purposes, an override control could be put in the test mode register as well, but in no normal operation case would you want the control register to modify the precoder (either you do it by link partner request determined by the PHY or by the link partner registers forcing a configuration).
Also, nowhere do we link PrecodeSel to the precoder setting with a requirement (shall).

SuggestedRemedy

Delete row for 1.2309.10:9 from Table 45-155a (page 35 lines 40-44)

Change reserved row in Table 45-155a (page 35 line 45) from 1.2309.8:0 to 1.2309.10:0

Delete page 36 lines 40-48, subclause 149.2.1.192.4 and renumber.

On page 41 line 33, Change Reserved row to be : 1.2313.12 | Reserved | Value always 0 | RO
and insert three new rows below the new reserved row:
1.2313.11 |Local transmitter precoder override | 0 = Normal Operation
 1 = User Overrride | R/W
1.2313.10:9 | Local transmit precoder setting | 00 = transmit with no precoder
 01 = transmit with 1-D precoder
 10 = transmit with 1+D precoder
 11 = transmit with 1-D2 precoder | R/W
1.2313.8:2 | Reserved | Value always 0 | RO

On page 41 line 47, add new subclauses after 45.2.1.196.1 and renumber appropriately:

45.2.1.196.2 Local transmitter precoder override (1.2313.11)
When bit 1.2313.11 is set to one, the local transmitter's precoder shall be controlled by the value of bits 1.2313.10:9, and the precoder requested by the link partner in PrecodeSel shall be ignored. When bit 1.2313.11 is set to zero, the transmitter shall ignore the bits 1.2313.10:9, and the precoder is set according to the value of PrecodeSel received from the link partner as specified in 149.3.2.2.20. The default value of 1.2313.11 is zero.

45.2.1.196.3 Local transmit precoder setting (1.2313.10:9)
When bit 1.2313.11 is set to one, bits 1.2313.10:9 control the precoder setting of the local transmitter, as defined in 149.3.2.2.20 in the variable precoder_type. For testing purposes, the precoder can be set using these bits, and the specified test can be carried out in by using these bits, bit 1.2313.11, and enabling test mode 3. During normal operation, bit 1.2313.11 is set to zero, and the precoder is set according to the value of PrecodeSel received from the link partner, and bits 1.2313.10:9 are ignored.

Add PICS items MM232 and MM233(editorial license to number and position appropriately):

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **45**   Page 6 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **45.2.1.192**   9/12/2019 2:11:21 PM
SORT ORDER: Clause, Subclause, page, line

(Feature | Subclause | Value/comment | Status | Support)
When bit 1.2313.11 is set to one, the value in bits 1.2313.10:9 control the local
transmitter's precoder | 45.2.1.196.2 | | M | Yes[] No[]
When bit 1.2313.11 is set to zero, the value in bits 1.2313.10:9 are ignored and the link
partner's request controls the local transmitter's precoder | 45.2.1.196.2 | M | Yes [] No []

On page 102 line 27 (149.3.2.2.20), change "The precoder_type is determined by the PCS
decoding two bits in InfoField messages received from the remote PHY during training as:"
to: "In normal operation (see 45.2.1.196.3) the value of precoder_type shall be set to the
value of PrecodeSel received from the link partner in the InfoField messages (see
149.4.2.4.5):"
(this PICS is already covered by PCT21)

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

The following response has minor editorial corrections to the Suggested Remedy.

Delete row for 1.2309.10:9 from Table 45-155a (page 35 lines 40-44)

Change reserved row in Table 45-155a (page 35 line 45) from 1.2309.8:0 to 1.2309.10:0

Delete page 36 lines 40-48, subclause 149.2.1.192.4 and renumber.

On page 41 line 33, Change Reserved row to be : 1.2313.12 | Reserved | Value always 0 |
RO
and insert three new rows below the new reserved row:
1.2313.11 |Local transmitter precoder override | 0 = Normal Operation
 1 = User Overrride | R/W
1.2313.10:9 | Local transmit precoder setting | 00 = transmit with no precoder
 01 = transmit with 1-D precoder
 10 = transmit with 1+D precoder
 11 = transmit with 1-D2 precoder | R/W
1.2313.8:2 | Reserved | Value always 0 | RO

On page 41 line 47, add new subclauses after 45.2.1.196.1 and renumber appropriately:

45.2.1.196.2 Local transmitter precoder override (1.2313.11)
When bit 1.2313.11 is set to one, the local transmitter's precoder shall be controlled by the
value of bits 1.2313.10:9, and the precoder requested by the link partner in PrecodeSel
shall be ignored. When bit 1.2313.11 is set to zero, the transmitter shall ignore bits
1.2313.10:9, and the precoder is set according to the value of PrecodeSel received from
the link partner as specified in 149.3.2.2.20. The default value of 1.2313.11 is zero.

45.2.1.196.3 Local transmit precoder setting (1.2313.10:9)
When bit 1.2313.11 is set to one, bits 1.2313.10:9 control the precoder setting of the local
transmitter, as defined in 149.3.2.2.20 in the variable precoder_type. For testing purposes,
the precoder can be set using these bits, and the specified test can be carried out by using
these bits, bit 1.2313.11, and enabling test mode 3. During normal operation, bit 1.2313.11
is set to zero, and the precoder is set according to the value of PrecodeSel received from

the link partner, and bits 1.2313.10:9 are ignored.

Add PICS items MM232 and MM233(editorial license to number and position appropriately):
(Feature | Subclause | Value/comment | Status | Support)
When bit 1.2313.11 is set to one, the value in bits 1.2313.10:9 control the local
transmitter's precoder | 45.2.1.196.2 | | M | Yes[] No[]
When bit 1.2313.11 is set to zero, the value in bits 1.2313.10:9 are ignored and the link
partner's request controls the local transmitter's precoder | 45.2.1.196.2 | M | Yes [] No []

On page 102 line 27 (149.3.2.2.20), change "The precoder_type is determined by the PCS
decoding two bits in InfoField messages received from the remote PHY during training as:"
to: "In normal operation (see 45.2.1.196.3) the value of precoder_type shall be set to the
value of PrecodeSel received from the link partner in the InfoField messages (see
149.4.2.4.5):"
(this PICS is already covered by PCT21)

Cl **45**   *SC* **45.2.1.192.3**   *P* **36**   *L* **35**   # 67

Tu, Mike   Broadcom

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

After exiting the low-power mode, the PHY should go to either Auto-Negotiation or PHY
LInk Synchronization, instead of going to Figure 149-33 PHY Control state diagram.

SuggestedRemedy

Delete the entire paragraph.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Delete "The MultiGBASE-T1 PHY executes a full retrain as defined in Figure 149–33 after
exiting from reset or low-power mode."

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **45**   Page 7 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **45.2.1.192.3**   9/12/2019 2:11:21 PM
SORT ORDER: Clause, Subclause, page, line

Cl **45**	*SC* **45.2.1.192.4**	*P* **36**	*L* **43**	*#* 165

McClellan, Brett   Marvell

Comment Type **TR**   *Comment Status* **A**   *Precoder*

There are several problems subclause.
First - "Setting these bits forces the precoder to the mode set. "
 this sentence makes it appear that simply writing to these bits will cause precoder to use the written setting without other action required when in fact this setting is used only for test mode 3.

Second - "During normal operation, these bits are set according to the precoder requested by the link partner in the Infofield, and reading bits 1.2309.10:9 will represent the value of the request, which has been received and set into the transmitter. "
It is very poor practice to use configuration bits (R/W) also as status bits (usually RO). It causes issues when read-modify-write operations are performed. It is also not clear whether these bits are supposed to act as RO in normal mode but R/W during test mode. Further, during normal operation the setting of the precoder can already be inferred from 1.2312.3:2 status bits (Link partner precoder requested)

SuggestedRemedy

change the Text as follows:
Bits 1.2309.10:9 determine the precoder setting of the transmitter, as defined in 149.3.2.2.20 in the variable precoder_type while in test mode 3.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

These lines are removed by comment #124.

Cl **45**	*SC* **45.2.1.193**	*P* **37**	*L* **7**	*#* 97

Graba, Jim   Broadcom

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

In Table 45-155b, "EEE Ability" should be "EEE ability".

SuggestedRemedy

Change "EEE Ability" to "EEE ability"

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make suggested change to follow IEEE802.3 style.

Cl **45**	*SC* **45.2.1.193.5**	*P* **38**	*L* **8**	*#* 44

Slavick, Jeff   Broadcom

Comment Type **TR**   *Comment Status* **A**   *Precoder*

Actual precoder requested doesn't really make any sense to me based upon description. I believe this field should be indicating the actual state/control of the receive precoder.

SuggestedRemedy

See Presentation tu_3ch_01_0919.pdf

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment has the same response as #123.

Make the following changes:
Page 37 line 21 (Table 45-155b) change "Actual precoder requested" to "PrecodeSel"
Page 38 line 8 (45.2.1.193.5 header) change "Actual precoder selected" to "PrecodeSel", and replace text of 45.2.1.193.5 (P38 lines 10-12) to read as follows:
"Bits 1.2310.4:3 contain the requested precoder setting communicated by the PHY to the link partner via the PrecodeSel bits in the Infofield (see 149.4.2.4.4)."

Page 39 line 15 (Table 45-155c) and Page 38 line 45 (45.2.1.194.2 header) change "Precoder request override" to "Precoder Selection", and replace text (P38 lines 47-48) to read as follows:
"When 1.2311.5 is set to a one, the PHY shall use 1.2311.3:2 for the value of PrecodeSel, and when set to a zero the PHY controls the value of PrecodeSel. PrecodeSel is the desired precoder setting communicated to the link partner via the Infofield specified in 149.4.2.4.4."

Page 39 line 23 (Table 45-155c) and Page 39 line 37 (45.2.1.194.4 header) change "Precoder requested" to "User precoder selection", and replace text (P39 lines 38-39) to read as follows:
"When 1.2311.5 is a one, bits 1.2311.3:2 are the requested precoder setting communicated by the PHY to the link partner via the PrecodeSel bits in the Infofield (see 149.4.2.4.4)."

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **45**   Page 8 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **45.2.1.193.5**   9/12/2019 2:11:21 PM
SORT ORDER: Clause, Subclause, page, line

Cl **45**	*SC* **45.2.1.193.5**	*P* 38	*L* 8	*#* 122

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

Comment Type **ER**   *Comment Status* **A**   *Precoder*

"Actual precoder selected" - title of this subclause is not the same as the name of the bit in the table (Actual precoder requested) - suggest the table is more appropriate. (If the larger language (comment PRECD1) is accepted or accepted in principle, this comment should become moot and should be accomodated by the resolution).

SuggestedRemedy

Change "Actual precoder selected" to "Actual precoder requested".

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change per comment #123
Change the title of 45.2.1.193.5 from "Actual precoder selected (1.2310.4:3)" to:
"PrecodeSel (1.2310.4:3)"

Cl **45**	*SC* **45.2.1.193.5**	*P* 38	*L* 8	*#* 123

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

Comment Type **TR**   *Comment Status* **A**   *Precoder*

(Comment PRECD1) The language of "Actual precoder requested" or "selected" is all messed up and confusing. Which precoder paramters relate to the local transmitter and which to the request of the link partner's transmitter is not consistent. The "Link partner" ones are all clear, leaving me to think that it is just the local PHY's REQUEST, which is meant here.

SuggestedRemedy

Make the following changes:
Page 37 line 21 (Table 45-155b) change "Actual precoder requested" to "PrecodeSel"
Page 38 line 8 (45.2.1.193.5 header) change "Actual precoder selected" to "PrecodeSel", and replace text of 45.2.1.193.5 (P38 lines 10-12) to read as follows:
"Bits 1.2310.4:3 contain the requested precoder setting communicated by the PHY to the link partner via Infofields in the PrecodeSel field (see 149.4.2.4.4)."

Page 39 line 15 (Table 45-155c) and Page 38 line 45 (45.2.1.194.2 header) change "Precoder request override" to "Precoder Selection", and replace text (P38 lines 47-48) to read as follows:
"When 1.2311.5 is set as a one, the PHY shall use 1.2311.3:2 for the value of PrecodeSel, and when set to a zero the PHY controls the value of PrecodeSel. PrecodeSel is the desired precoder setting communicated to the link partner via Infofields specified in 149.4.2.4.4."

Page 39 line 23 (Table 45-155c) and Page 39 line 37 (45.2.1.194.4 header) change "Precoder requested" to "User precoder selection", and replace text (P39 lines 38-39) to read as follows:
When bit 1.2311.5 is a one, bits 1.2311.3:2 are the requested precoder setting communicated by the PHY to the link partner via Infofields in the PrecodeSel field (see 149.4.2.4.4).

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Make the following changes:
Page 37 line 21 (Table 45-155b) change "Actual precoder requested" to "PrecodeSel"
Page 38 line 8 (45.2.1.193.5 header) change "Actual precoder selected" to "PrecodeSel", and replace text of 45.2.1.193.5 (P38 lines 10-12) to read as follows:
"Bits 1.2310.4:3 contain the requested precoder setting communicated by the PHY to the link partner via the PrecodeSel bits in the Infofield (see 149.4.2.4.4)."

Page 39 line 15 (Table 45-155c) and Page 38 line 45 (45.2.1.194.2 header) change "Precoder request override" to "Precoder Selection", and replace text (P38 lines 47-48) to read as follows:
"When 1.2311.5 is set to a one, the PHY shall use 1.2311.3:2 for the value of PrecodeSel, and when set to a zero the PHY controls the value of PrecodeSel. PrecodeSel is the desired precoder setting communicated to the link partner via the Infofield specified in

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **45**   Page 9 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **45.2.1.193.5**   9/12/2019 2:11:21 PM
SORT ORDER: Clause, Subclause, page, line

149.4.2.4.4."

Page 39 line 23 (Table 45-155c) and Page 39 line 37 (45.2.1.194.4 header) change "Precoder requested" to "User precoder selection", and replace text (P39 lines 38-39) to read as follows:
"When 1.2311.5 is a one, bits 1.2311.3:2 are the requested precoder setting communicated by the PHY to the link partner via the PrecodeSel bits in the Infofield (see 149.4.2.4.4)."

Cl 45   *SC* 45.2.1.193.5   *P* 38   *L* 8   # 4

Anslow, Pete   Ciena

Comment Type   **E**   *Comment Status* **A**   *Precoder*
The parameter name in Table 45-155b is "Actual precoder requested" and this fits with the text in the description cell as well as the text in 45.2.1.193.5.
However, the title of 45.2.1.193.5 is "Actual precoder selected" which does not match

SuggestedRemedy
Change the title of 45.2.1.193.5 from "Actual precoder selected (1.2310.4:3)" to: "Actual precoder requested (1.2310.4:3)"

Response   *Response Status* **C**
ACCEPT IN PRINCIPLE.

Change per comment #123
Change the title of 45.2.1.193.5 from "Actual precoder selected (1.2310.4:3)" to:
"PrecodeSel (1.2310.4:3)"

Cl 45   *SC* 45.2.1.193.5   *P* 38   *L* 8   # 68

Tu, Mike   Broadcom

Comment Type   **E**   *Comment Status* **A**   *Precoder*
The "actual precoder selected" name is confusing to readers.

SuggestedRemedy
See proposed changes in tu_3ch_01_0919.pdf.

Response   *Response Status* **C**
ACCEPT IN PRINCIPLE.

This comment has the same response as #123.

Make the following changes:
Page 37 line 21 (Table 45-155b) change "Actual precoder requested" to "PrecodeSel"
Page 38 line 8 (45.2.1.193.5 header) change "Actual precoder selected" to "PrecodeSel", and replace text of 45.2.1.193.5 (P38 lines 10-12) to read as follows:
"Bits 1.2310.4:3 contain the requested precoder setting communicated by the PHY to the link partner via the PrecodeSel bits in the Infofield (see 149.4.2.4.4)."

Page 39 line 15 (Table 45-155c) and Page 38 line 45 (45.2.1.194.2 header) change "Precoder request override" to "Precoder Selection", and replace text (P38 lines 47-48) to read as follows:
"When 1.2311.5 is set to a one, the PHY shall use 1.2311.3:2 for the value of PrecodeSel, and when set to a zero the PHY controls the value of PrecodeSel. PrecodeSel is the desired precoder setting communicated to the link partner via the Infofield specified in 149.4.2.4.4."

Page 39 line 23 (Table 45-155c) and Page 39 line 37 (45.2.1.194.4 header) change "Precoder requested" to "User precoder selection", and replace text (P39 lines 38-39) to read as follows:
"When 1.2311.5 is a one, bits 1.2311.3:2 are the requested precoder setting communicated by the PHY to the link partner via the PrecodeSel bits in the Infofield (see 149.4.2.4.4)."

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* 45   Page 10 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* 45.2.1.193.5   9/12/2019 2:11:21 PM
SORT ORDER: Clause, Subclause, page, line

Cl **45**   *SC* **45.2.1.194**   *P* **39**   *L* **19**   # 98

Graba, Jim   Broadcom

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

In Table 45-155c, change "Slow wake" to "Slow Wake" in order to be consistent.

SuggestedRemedy

Change all occurrences of "Slow wake" and "slow wake" into "Slow Wake" througout the document.

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make changes defined below to make draft consistent.
P39 L19 - change "Slow wake" to "Slow Wake"
P40 L20, P40 L44, & P40 L45 - change "slow wake" to "Slow Wake"

Cl **45**   *SC* **45.2.1.194.1**   *P* **38**   *L* **41**   # 69

Tu, Mike   Broadcom

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

"Reed-Solomon 'receiver' interleave setting" does not sound right. Delete the word 'receiver'.

SuggestedRemedy

Change from: "… the Reed-Solomon receiver interleave setting …"
To: "… the Reed-Solomon interleave setting …"

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make suggested change and additional change to correct "Infofields" to "InfoField".

Cl **45**   *SC* **45.2.1.194.1**   *P* **38**   *L* **42**   # 170

Wienckowski, Natalie   General Motors

Comment Type   **E**   *Comment Status*   **A**   *late*

This comment is "OOS"; however, the change should be made to make the draft consistent. InfoField is the name for the set of bytes used to indicate the PHY capability; however, the capitalization is not consistent in the draft.

SuggestedRemedy

Make the following changes:
P38 L42, P39 L50, and P147 L31 - Change: Infofields
To: the InfoField

P78 L29, P91 L31, and P144 L11 - Change: Infofield
To: InfoField

P177 L16 - Change: infofield
To: InfoField

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

Make the following changes:
In 1.4.289 add statement to the effect that Clause 149 uses a 12 octet Infofield

Change all instances of "infofield" with any capitalization to be "Infofield" throughout the P802.3ch draft.

Cl **45**   *SC* **45.2.1.194.4**   *P* **39**   *L* **38**   # 5

Anslow, Pete   Ciena

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

The convention used in Clause 45 is to use "is one" and "is zero" rather than "is 1" and "is 0".

SuggestedRemedy

Change "is 1" to "is one".
Change "is 0" to "is zero".

Response   *Response Status*   **C**

ACCEPT.

TYPE: TR/technical required   ER/editorial required   GR/general required   T/technical   E/editorial   G/general   *Cl* **45**   Page 11 of 45
COMMENT STATUS: D/dispatched   A/accepted   R/rejected   RESPONSE STATUS: O/open   W/written   C/closed   U/unsatisfied   Z/withdrawn   *SC* **45.2.1.194.4**   9/12/2019 2:11:21 PM
SORT ORDER: Clause, Subclause, page, line

Cl **45**	*SC* **45.2.1.194.5**	*P* **39**	*L* **45**	*#* 125

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

Comment Type **TR**   *Comment Status* **A**   *Registers*

"This bit shall be set" puts a requirement on the user and is inappropriate for a read/write bit. Reverse the changes from d2.0 in 45.2.1.194.5, 45.2.1.194.6 (note that this language is appropriate for RO registers but not for situations where the MDIO is supposed to write the value into the register, like the ones cited).

SuggestedRemedy

Change "shall be set" to "should be set" on page 39 line 45 and on page 39 line 52,

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

P39 L43 Replace the existing paragraph with:

Support for MultiGBASE-T1 OAM capability shall be advertised if this bit is set to one.
Support for MultiGBASE-T1 OAM capability shall not be advertised if this bit is set to zero.
Support for MultGBASE-T1 OAM capability should only be advertised if it is supported by the PHY.

And P39 L50 Replace the existing paragraph with:

Support for EEE capability shall be advertised if this bit is set to one. Support for EEE capability shall not be advertised if this bit is set to zero. Support for EEE operation should only be advertised if it is supported by the PHY.

And MM227 Replace the text in the "Feature" column with: Advertisement of support for MultiGBASE-T1 OAM; and in the "Value/Comment" column put: Support is advertised if bit 1.2311.1 is set to one, and not advertised if bit 1.2311.1 is set to zero

And MM228 Replace the text in the "Feature" column with: Advertisement of support for MultiGBASE-T1 EEE; and in the "Value/Comment" column put: Support is advertised if bit 1.2311.0 is set to one, and not advertised if bit 1.2311.0 is set to zero

Cl **45**	*SC* **45.2.1.195.1**	*P* **40**	*L* **41**	*#* 99

Graba, Jim   Broadcom

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

These bits are requested by the link partner via Infofield. The current text is confusing.

SuggestedRemedy

Change from: "… communicated to the link partner via Infofields …"
To: "… communicated by the link partner via InfoFields …"

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make requested change to improve clarity.

Cl **45**	*SC* **45.2.1.195.4**	*P* **41**	*L* **5**	*#* 70

Tu, Mike   Broadcom

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

Both "local device" and "local PHY" are used in this document. Maybe we should stay with "local PHY"?

SuggestedRemedy

Replace all occurrenecs of "local device" by "local PHY" throughout the document.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Change "local device" to "local PHY" at the following locations to make the draft consistent:

P41 L5, P41 L12, P46 L8, P55 L45, P55 L49, P153 L40, P153 L43, P153 L44

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Clause, Subclause, page, line

Cl **45**
SC **45.2.1.195.4**

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Cl **45**	*SC* **45.2.1.196.2**	*P* **41**	*L* **50**	#	6

Anslow, Pete   Ciena

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

The convention used in Clause 45 for the values of pairs of bits is to not include a space between them.

SuggestedRemedy

Change "value of 0 0" to "value of 00"
Change "value of 0 1" to "value of 01"
Change "value of 1 0" to "value of 10"

Response   *Response Status*   **C**

ACCEPT.

Cl **45**	*SC* **45.2.1.196.2**	*P* **41**	*L* **51**	#	146

McClellan, Brett   Marvell

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

Test mode 2 is described in 149.5.2.3.1

SuggestedRemedy

change "149.5.2.3"
to "149.5.2.3.1"

Response   *Response Status*   **C**

ACCEPT.

Cl **45**	*SC* **45.2.1.197**	*P* **42**	*L* **5**	#	155

McClellan, Brett   Marvell

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

The example values do not match the register definitions for 1.2314 and 1.2315. The examples use a resolution of 1/2560 instead of 0.1dB.

SuggestedRemedy

lines 5 and 13, delete the example text ", 12.7 dB represented by 0xFF00, and –12.7 dB represented by 0x0100"

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

P42, L5 Change "0x8000" to "0x80"
P42, L6 Change "0xFF00" to "0xFF"
P42, L6 Change "0x0100" to "0x01"

P42 L7 Insert the following text: The assignment of bits in the MultiGBASE-T1 SNR operating margin register is shown in Table 45–155x.

Add a register bit definition table (45-155x) with the following 2 content rows:
1.2314.15:8 | MultiGBASE-T1 SNR operating margin | value of current SNR operating margin in dB | RO
1.2314.7:0 | Reserved | Value always 0 | RO
With the following note on the table: ^aRO = Read only

P42, L13 Change "0x8000" to "0x80"
P42, L13 Change "0xFF00" to "0xFF"
P42, L13 Change "0x0100" to "0x01"

P42 L15 Insert the following text: The assignment of bits in the MultiGBASE-T1 Minimum SNR margin register is shown in Table 45–155y.

Add a register bit definition table (45-155y) with the following 2 content rows:
1.2315.15:8 | MultiGBASE-T1 Minimum SNR margin | value of minimum observed SNR margin in dB | RO
1.2315.7:0 | Reserved | Value always 0 | RO
With the following note on the table: ^aRO = Read only

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SORT ORDER: Clause, Subclause, page, line

Cl **45**   *SC* **45.2.1.199**   *P* **42**   *L* **18**   # 166

McClellan, Brett   Marvell

Comment Type **TR**   *Comment Status* **A**   *Vendor*

"The values of the bits in these registers are all zeros unless the PHY identifies the link partner during Auto-Negotiation through communicating OUIs using the NEXT pages." Identification of the link partner is not defined and is beyond the scope of this specification. I suggest borrowing the text from Clause 55.

SuggestedRemedy

change text to "If during Auto-Negotiation both devices agree on the use of the vendor specific messages, they may be used as a communication channel; otherwise the bits are set to zero."

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Resolved by the response to comment 1, copied below.

In Table 45-3:
Change the name of register 1.2316 to "MultiGBASE-T1 user defined data" in subclause 45.2.1.199
Change the name of register 1.2317 to "MultiGBASE-T1 link partner user defined data" in subclause 45.2.1.200
In 45.2.1.199:
Change the title to "MultiGBASE-T1 user defined data register (Register 1.2316)"
Change the text to: "The assignment of bits for the MultiGBASE-T1 user defined data register is shown in Table 45–155f. The values of the bits in this register are outside the scope of this standard."
In Table 45-155f:
Change the title to: "MultiGBASE-T1 user defined data register bit definitions"
Change the Name to: "MultiGBASE-T1 user defined data"
Change the Description to: "16 bits of vendor specific data that the PHY sends to its link partner"
Delete the last row of the table.
Change footnote a to "R/W = Read/Write"
In 45.2.1.199.1:
Change the title to: "PHY vendor specific data (1.2316.15:0)"
Change text to: "Bits 1.2316.15:0 contain vendor specific data that the PHY may communicate to its link partner during training."
Delete 45.2.1.199.2
Create a new level 4 subclause:
"45.2.1.200 MultiGBASE-T1 link partner user defined data register (Register 1.2317)" with text:
"The assignment of bits for the MultiGBASE-T1 link partner user defined data register is shown in Table 45–155g. The values of the bits in this register are outside the scope of this standard."
Create Table 45-155g with title "MultiGBASE-T1 link partner user defined data register bit definitions" and a row with Name entry for 1.2317.15:0 is "Link partner PHY vendor specific

data", Description is "16 bits of vendor specific data that the PHY may receive from its link partner", R/W is "RO", and footnote a is "RO = Read only"
Create a new level 5 subclause:
"45.2.1.200.1 Link partner PHY vendor specific data (1.2317.15:0)" with text "Bits 1.2317.15:0 contain vendor specific data that the PHY may receive from its link partner during training."

Cl **45**   *SC* **45.2.1.199**   *P* **42**   *L* **30**   # 147

McClellan, Brett   Marvell

Comment Type **E**   *Comment Status* **A**   *Vendor*

'Reserved' should be 'Link partner vendor specific data'

SuggestedRemedy

change 'Reserved'
to 'Link partner vendor specific data'

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This is moved to a new subclause with a new name by comment #1.

Cl **45**   *SC* **45.2.1.199**   *P* **42**   *L* **30**   # 71

Tu, Mike   Broadcom

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

Register 1.2317 contains the Link partner vendor specific data.

SuggestedRemedy

Under column "Name", change "Reserved" to "Link partner vendor specific data"

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This row is deleted by comment #1.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **45**   Page 14 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **45.2.1.199**   9/12/2019 2:11:22 PM
SORT ORDER: Clause, Subclause, page, line

Cl **45**	*SC* **45.2.3.72**	*P* **43**	*L* **42**	# 126

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

Comment Type **ER**   *Comment Status* **A**   *OAM*

Table 45-241 bit 3.2308.15 description and 45.2.3.71.1 contain a triplicate shalls to the one in the OAM state diagram (45.2.3.72.1 and the shall on the OAM state diagram, and reads odd, referring to 'state machine' inappropriately. The 'shall' on this bit clearing is actually the state diagram.
This is similar to the changes in the receive register 45-243, subject of maintenance request 1327 and I plan to submit it as a maintenance request.
Another comment fixes the defect that the OAM state diagrams don't have shall's associated with them. This defect is also in clause 97 and makes the maintenance request complicated, because there are NO PICS in clause 97 for OAM....

SuggestedRemedy

In Table 45-241, Change the second sentence in Description of 2313.15
from: "This bit shall self clear when register 3.2317 is read."
to : "This bit self clears when register 3.2317 is read."

In 45.2.3.72.1 change "shall be set to one", to "is set to one" (P44 L27),
and on line 29 change "This register shall be cleared by the state machine"
to: "This bit self-clears"...

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

P46 L19 - Change: This register shall be cleared when register 3.2317 is read.
To: This bit shall self-clear when register 3.2317 is read.

P46 L34 - Delete: Register 3.2313.15 shall be cleared when register 3.2317 is read.

Bring in PICS RM134 and change "Feature": Register 3.2313 is cleared when register 3.2317 is read.
To: Bit 3.2313.15 self clears when register 3.2317 is read.

Bring in PICS RM135 and RM136 and "delete" them.

P43 L42 - Change: This bit shall self-clear when registers are loaded by the state machine.
To: This bit self clears when registers are loaded by the OAM transmit state diagram.

P44 L29 - Change: This register shall be cleared by the state machine to indicate ...
To: This bit self-clears to indicate …

Bring in PICS RM125, RM126, and RM129 and "delete" them.

Cl **45**	*SC* **45.5.3.3**	*P* **54**	*L* **8**	# 7

Anslow, Pete   Ciena

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

The highest inserted item is MM231.

SuggestedRemedy

Change "through MM227" to "through MM231"

Response   *Response Status* **C**

ACCEPT.

Cl **78**	*SC* **78.2**	*P* **58**	*L* **53**	# 8

Anslow, Pete   Ciena

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

The bottom ruling of Table 78-2 should not be "Very Thin"

SuggestedRemedy

remove the override for the bottom ruling of Table 78-2

Response   *Response Status* **C**

ACCEPT.

Cl **78**	*SC* **78.5**	*P* **59**	*L* **17**	# 9

Anslow, Pete   Ciena

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

"Insert an 10th paragraph" should be "Insert a 10th paragraph"

SuggestedRemedy

Change "an" to "a"

Response   *Response Status* **C**

ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Clause, Subclause, page, line

Cl **78**
SC **78.5**

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9/12/2019 2:11:22 PM

Cl **98**	*SC* **98.5.1**	*P* **63**	*L* **10**	# 52

Lo, William   Axonne Inc.

Comment Type **TR**   *Comment Status* **A**   *AN*

Cannot condense into 1 variable (mGigT1). If one device can do 2.5G only and another can do 10G only how would the incompatible_link work as both would assert mGigT1?
Fixing the footnote in page 156 is the proper way to address D2.0 comment 224.

SuggestedRemedy

Undo changes from D2.0 comment 224
Page 156 line 22 change
link_control_mGigT1 and link_status_mGigT1 to
link_control_mGigT1 and link_status_mGigT1 where mGigT1 is 2.5GigT1, 5GigT1, or 10GigT1.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Undo changes from D2.0 comment 224

P156 L22 change: The variables link_control and link_status are designated as link_control_mGigT1 and link_status_mGigT1, respectively,

To: The variables link_control and link_status are designated as link_control_2.5GigT1 and link_status_2.5GigT1 for 2.5GBASE-T1, link_control_5GigT1 and link_status_5GigT1 for 5GBASE-T1, and link_control_10GigT1 and link_status_10GigT1 for 10GBASE-T1

Cl **104**	*SC* **104.5.6.4**	*P* **66**	*L* **40**	# 23

Wienckowski, Natalie   General Motors

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

SuggestedRemedy

Make "Table 104-7" a hyperlink.
Also, P67 L4

Response   *Response Status* **C**
ACCEPT.

Cl **104**	*SC* **104.5.6.4**	*P* **67**	*L* **5**	# 24

Wienckowski, Natalie   General Motors

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

SuggestedRemedy

Make "Table 104-7" a hyperlink and remove the "forrest green" color.
Also, P67 L6, P67 L11, P67 L14.

Response   *Response Status* **C**
ACCEPT.

Cl **104**	*SC* **104.9**	*P* **68**	*L* **1**	# 10

Anslow, Pete   Ciena

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

The editing instruction at the top of page 68 is redundant as each change has its own editing instruction.
"Modify" is not a valid editing instruction.
The instruction is too vague to be of any use anyway.

SuggestedRemedy

Delete the editing instruction at the top of page 68

Response   *Response Status* **C**
ACCEPT.

Cl **104**	*SC* **104.9.3**	*P* **68**	*L* **8**	# 11

Anslow, Pete   Ciena

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

The two items *PSETE and *PDTE are being inserted by IEEE Std 802.3cg-20xx. The redundant editing instruction at the top of the page (proposed to be deleted in another comment) does not change the fact that this editing instruction should include this.

SuggestedRemedy

Change "in the table in 104.9.3 as follows" to "in the table in 104.9.3 (as modified by IEEE Std 802.3cg-20xx) as follows"

Response   *Response Status* **C**
ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **104**   Page 16 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **104.9.3**   9/12/2019 2:11:22 PM
SORT ORDER: Clause, Subclause, page, line

Cl **104**   *SC* **104.9.4.3**   *P* **69**   *L* **3**   # 12

Anslow, Pete   Ciena

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

"Modify" is not a valid editing instruction.

SuggestedRemedy

Change "Modify item" to "Change item"

Response   *Response Status* **C**

ACCEPT.

Cl **104**   *SC* **104.9.4.3**   *P* **69**   *L* **12**   # 25

Wienckowski, Natalie   General Motors

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

SuggestedRemedy

Make "Table 104-7" a hyperlink.

Response   *Response Status* **C**

ACCEPT.

Cl **104**   *SC* **104.9.4.3**   *P* **69**   *L* **17**   # 39

Wienckowski, Natalie   General Motors

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

SuggestedRemedy

Make "Clause 97" a hyperlink and remove the "forrest green" color.

Response   *Response Status* **C**

ACCEPT.

Cl **125**   *SC* **125.1**   *P* **71**   *L* **46**   # 128

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

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

"NOTE 2 - AUTO-NEGOTIATION IS OPTIONAL" Auto-Negotiation is only optional for the BASE-T1 PHYs.

SuggestedRemedy

Add "FOR BASE-T1 PHYs" after "AUTO-NEGOTIATION IS OPTIONAL"

Proposed Response   *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **125**   *SC* **125.1.4**   *P* **72**   *L* **34**   # 26

Wienckowski, Natalie   General Motors

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

SuggestedRemedy

Make "78" a hyperlink.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Correct the link to improve readability of the draft.

Cl **125**   *SC* **125.3**   *P* **74**   *L* **12**   # 47

Lo, William   Axonne Inc.

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

Table fix gap in column 2 numbers

SuggestedRemedy

Remove the gaps in all the numbers in column 2.

Proposed Response   *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **125**   Page 17 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **125.3**   9/12/2019 2:11:22 PM
SORT ORDER: Clause, Subclause, page, line

Cl **149**	*SC* **149.1.3.1**	*P* **77**	*L* **44**	# 129

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

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

149.3.2.2.18 is NOT where the interleaving is described. It is where the scrambler is. The interleaver IS in 149.3.2.2.16, where it was in the previous draft....

SuggestedRemedy

Change cross-ref from 149.3.2.2.18 to 149.3.2.2.16

Response   *Response Status* **C**

ACCEPT.

Cl **149**	*SC* **149.1.3.3**	*P* **78**	*L* **27**	# 100

Graba, Jim   Broadcom

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

The last part of the sentence is missing?

SuggestedRemedy

Based on D2.0, change last part of sentence from: "… to be lost or"
To: "… to be lost or corrupted."

Response   *Response Status* **C**

ACCEPT.

Cl **149**	*SC* **149.1.3.3**	*P* **78**	*L* **27**	# 42

Slavick, Jeff   Broadcom

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

Extra or instead of a period.

SuggestedRemedy

Replace the or with a "."

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

The word "corrupted" was acccidentally deleted from the end of the sentence. Add it back per coment #100.

Cl **149**	*SC* **149.1.3.3**	*P* **78**	*L* **27**	# 130

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

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

"The transition to or from LPI mode shall not cause any MAC frames to be lost or" is a fragment of a sentence and an untestable shall....

SuggestedRemedy

delete sentence fragment, or change it to read: "The transition to or from LPI mode should not cause any MAC frames to be lost or corrupted."

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change: The transition to or from LPI mode shall not cause any MAC frames to be lost or
To: The transition to or from LPI mode is not expected to cause any MAC frames to be lost or corrupted.

Cl **149**	*SC* **149.1.3.3**	*P* **78**	*L* **33**	# 101

Graba, Jim   Broadcom

Comment Type **T**   *Comment Status* **R**   *Reject OOS*

PHY Health status is only available when the optional OAM is enabled.

SuggestedRemedy

Change from: "When the PHY Health status received …"
To: "When the optional MultiGBASE-T1 OAM is enabled and the PHY Health status received …"

Response   *Response Status* **C**

REJECT.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

PHY Health status is only received when MultiGBASE-T1 OAM is enabled, so making this change would add redundancy.
If the commenter still wants this change, he is encouraged to resubmit this comment at SA ballot.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **149**   Page 18 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **149.1.3.3**   9/12/2019 2:11:22 PM
SORT ORDER: Clause, Subclause, page, line

Cl **149**	*SC* **149.1.3.4**	*P* **78**	*L* **45**	*#*	102

Graba, Jim   Broadcom

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

More details are needed in the sentences between line 45 and line 47. Recommend to use Clause 97 as the baseline, and apply the scaling from 1 usec (Clause 97) to 1.25 usec (Clause 149).

SuggestedRemedy

Change line 45 to line 47 from: "The MASTER PHY sends a synchronization sequence. If there is no response from the SLAVE, the MASTER repeats by sending a synchronization sequence. If the slave detects the sequence, it responds with a synchronization sequence."

To: "The MASTER PHY sends a synchronization sequence for 1.25 µs. If there is no response from the SLAVE, the MASTER repeats by sending a synchronization sequence every 6.25 µs. If the slave detects the sequence, it responds with a synchronization sequence for 1.25 µs (after the MASTER has stopped transmitting)."

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Delete: The MASTER PHY sends a synchronization sequence. If there is no response from the SLAVE, the MASTER repeats by sending a synchronization sequence. If the slave detects the sequence, it responds with a synchronization sequence. If no other detection happens after the SLAVE response then Link Synchronization is successfully complete, link monitor timers are started, and the PHY Control state diagram starts Training.

Cl **149**	*SC* **149.1.6**	*P* **80**	*L* **41**	*#*	137

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

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

IEEE 802.3 state diagrams do not have precedence defined other than parentheses. To avoid parentheses around logical functions of relational operators (>, =, <, etc.) or combinations of AND and OR operations, adopting precedence is recommended. Fortunately, 802.3bt did this work and it is in clause 145.

SuggestedRemedy

Change "The notation used in the state diagrams follows the conventions of 21.5." to "The notation used in the state diagrams follows the conventions of state diagrams as described in 21.5, along with the extensions described in 145.2.5.2.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make the requested change as current state transitions in our diagrams assume this precedence.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **149**   Page 19 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **149.1.6**   9/12/2019 2:11:22 PM
SORT ORDER: Clause, Subclause, page, line

Cl **149**   *SC* **149.2.1.1**   *P* **81**   *L* **16**   # 74

Tu, Mike   Broadcom

Comment Type **E**   *Comment Status* **A**   :hnology Dependent Interface

It is sufficient to say "PHY Link Synchronization". Delete "algorithm".

SuggestedRemedy

Change from: "… the PHY Link Synchronization algorithm to …"
To: "… the PHY Link Synchronization to …"

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Make the following change to correct the draft.

Change page 81, line 16 and line 17 from:
"This primitive allows the Auto-Negotiation or the PHY Link Synchronization algorithm to
enable and disable operation of the PMA, as specified in 98.4.2, respectively."

 To:
"This primitive allows the Auto-Negotiation to enable and disable operation of the PMA, as
specified in 98.4.2."

Cl **149**   *SC* **149.2.1.1.1**   *P* **81**   *L* **24**   # 75

Tu, Mike   Broadcom

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

PMA_Link.request can be set by either the Auto-Negotiation or the PHY Link
Synchronization.

SuggestedRemedy

Change line 24 and 25 to:
DIABLE   Used by the Auto-Negotiation or PHY Link Synchronization function to disable
the PHY.
ENABLE   Used by the Auto-Negotiation or PHY Link Synchronization function to enable
the PHY.

Proposed Response   *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **149**   *SC* **149.2.1.1.2**   *P* **81**   *L* **30**   # 76

Tu, Mike   Broadcom

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

PMA_Link.request can be set by either the Auto-Negotiation or the PHY Link
Synchronization.

SuggestedRemedy

Change start of this sentence from: "Auto-Negotiation generates …"
To: "Auto-Negotiation or PHY Link Synchronization generates …"

Proposed Response   *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **149**   *SC* **149.2.1.2**   *P* **81**   *L* **40**   # 77

Tu, Mike   Broadcom

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

PMA_Link.indication also goes to the PHY Link Synchronization.

SuggestedRemedy

Change from: "…, and the Auto-Negotiation functions … "
To: "…, and the Auto-Negotiation or PHY Link Synchronization function …"

Proposed Response   *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **149**   *SC* **149.2.1.2.3**   *P* **82**   *L* **8**   # 78

Tu, Mike   Broadcom

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

Add a reference to 149.4.2.6.4 PHY Link Synchronization State Diagram.

SuggestedRemedy

Change from: "The effect of receipt of this primitive is specified in 98.4.1."
To: "The effect of receipt of this primitive is specified in 98.4.1 for Auto-Negotiation, and in
149.4.2.6.4 for PHY Link Synchronization."

Proposed Response   *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **149**   Page 20 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **149.2.1.2.3**   9/12/2019 2:11:22 PM
SORT ORDER: Clause, Subclause, page, line

Cl **149**   *SC* **149.3.2.2**   *P* **91**   *L* **12**   # 131

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

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

"The subsequent functions of the PCS Transmit process" is meaningless, because the preceding text no longer talks about the generation of 65B blocks.

SuggestedRemedy

Change "The subsequent functions of the PCS Transmit process" to "After mapping the XGMII transfers to 64B/65B blocks, the subsequent functions of the PCS Transmit process"

Response   *Response Status* **C**

ACCEPT.

Cl **149**   *SC* **149.3.2.2**   *P* **91**   *L* **13**   # 79

Tu, Mike   Broadcom

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

Conceptually the interleaving is done prior to or at the same time with the RS-FEC encoding. Also there is a typo on this line: "RS-FE symbols" should be "RS-FEC symbols".

SuggestedRemedy

Change this sentence from: "… OAM field, then add 340 bits of parity for the RS-FEC, interleave the RS-FE symbols, …"
To: "… OAM field, then interleave and add 340 bits of parity for the RS-FEC, …"

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change: The subsequent functions of the PCS Transmit process then take a block of fifty 65B blocks, append a 10-bit
OAM field, then add 340 bits of parity for the RS-FEC, interleave the RS-FE symbols, and then scramble the resulting bits.

To: The subsequent functions of the PCS Transmit process take L groups of fifty 65B blocks and append a 10-bit OAM field to each group. This forms the input to an L-interleaved RS-FEC which adds L x 340 parity bits. The resulting L x 3600 bits are then scrambled.

Cl **149**   *SC* **149.3.2.2**   *P* **91**   *L* **13**   # 132

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

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

Typo: RS-FE

SuggestedRemedy

Change "RS-FE" to "RS-FEC"

Response   *Response Status* **C**

ACCEPT.

Cl **149**   *SC* **149.3.2.2**   *P* **91**   *L* **13**   # 48

Lo, William   Axonne Inc.

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

Spelling

SuggestedRemedy

RS-FE should be RS_FEC

Response   *Response Status* **C**

ACCEPT.

Cl **149**   *SC* **149.3.2.2**   *P* **91**   *L* **13**   # 43

Slavick, Jeff   Broadcom

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

Missing C

SuggestedRemedy

Change "RS-FE symbols" to "RS-FEC symbols"

Response   *Response Status* **C**

ACCEPT.

Cl **149**   *SC* **149.3.2.2**   *P* **91**   *L* **13**   # 148

McClellan, Brett   Marvell

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

typo

SuggestedRemedy

change 'RS-FE' to 'RS-FEC' in multiple locations

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change on P91 L13 and P91 L 48

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **149**   Page 21 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **149.3.2.2**   9/12/2019 2:11:22 PM
SORT ORDER: Clause, Subclause, page, line

Cl **149**   *SC* **149.3.2.2**   *P* **91**   *L* **33**   # 149

McClellan, Brett   Marvell

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

incorrect reference. this links to the Link Monitor function.
Instead should point to 149.4.2.4

SuggestedRemedy

change to 149.4.2.5 to 149.4.2.4

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Correct the link to improve readability of the draft.

Cl **149**   *SC* **149.3.2.2**   *P* **91**   *L* **41**   # 156

McClellan, Brett   Marvell

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

"The 3600 bits in this frame are then encoded into 1800 PAM4 symbols and transferred
sequentially to the PMA."
This statement is incorrect.
Following the RS-FEC interleaving, there is no longer a 3600 bit frame for L=2 or 4.
Further, the bits are scrambled prior to PAM4 mapping.

SuggestedRemedy

Delete this sentence.

Response   *Response Status* **C**

ACCEPT.

Cl **149**   *SC* **149.3.2.2**   *P* **91**   *L* **41**   # 80

Tu, Mike   Broadcom

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

I think the last sentence is talking about superframes. So scale both number by L.

SuggestedRemedy

Change "3600 bits" to "3600xL bits", and change "1800 PAM4 symbols" to "1800xL PAM4
symbols".

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Delete this sentence per comment #156

Cl **149**   *SC* **149.3.2.2**   *P* **92**   *L* **2**   # 157

McClellan, Brett   Marvell

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

Per Figure 78-1 and 46.4 it is not the MAC but the RS and LPI Client that controls entry to
LPI mode.

SuggestedRemedy

Change 'MAC' to 'RS'

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Make the requested change to fix an error in the draft.

Cl **149**   *SC* **149.3.2.2**   *P* **92**   *L* **5**   # 81

Tu, Mike   Broadcom

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

The block diagramis "shown" in Figure 149-5.

SuggestedRemedy

Change the sentence to: "A block diagram of the PCS Transmit functions is shown in
Figure 149–5."

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Make the following change to be consistent with wording used throughout this draft.
Change: A block diagram of the PCS Transmit functions is in Figure 149–5.
To: A block diagram of the PCS Transmit function is shown in Figure 149–5.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **149**   Page 22 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **149.3.2.2**   9/12/2019 2:11:22 PM
SORT ORDER: Clause, Subclause, page, line

Cl **149**   *SC* **149.3.2.2**   *P* **92**   *L* **12**   # 150

McClellan, Brett   Marvell

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

's_n' should be 'S_n' to match usage in 149.3.4

SuggestedRemedy

change 's_n' to 'S_n'

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Make the requested change to be consistent with the terminology used throughout this
document.

Cl **149**   *SC* **149.3.2.2.2**   *P* **93**   *L* **52**   # 13

Anslow, Pete   Ciena

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

Figures 149-6 and 149-7 now contain two notes each.
When there is more than one note, the IEEE-SA Standards Style Manual includes "Multiple
notes in sequence should be numbered "NOTE 1—", "NOTE 2—", etc."
Also, there should be no spaces either side of the em-dash.

SuggestedRemedy

In Figures 149-6 and 149-7:
Change "Note — This" to "NOTE 1—This"
Change "Note — Figure" to "NOTE 2—Figure"

Response   *Response Status* **C**

ACCEPT.

Cl **149**   *SC* **149.3.2.2.3**   *P* **93**   *L* **17**   # 103

Graba, Jim   Broadcom

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

To be consistent, "TxB" should be "tx_coded" and "RxB" should be "rx_coded".

SuggestedRemedy

Change "The bits of a transmitted or received block are labeled TxB<31:0> and RxB<31:0>
where TxB<0> and RxB<0> represent the first transmitted bit."
To "The bits of a transmitted or received block are labeled tx_coded<64:0> and
rx_coded<64:0> respectively where tx_coded<0> and rx_coded<0> represent the first
transmitted bit.".

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Make the requested change so the text matches the Figure.

Cl **149**   *SC* **149.3.2.2.3**   *P* **93**   *L* **22**   # 158

McClellan, Brett   Marvell

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

There's no signals defined as TXD<32> to TXD<63>. Only the XGMII TXD<0> to TXD<31>.

SuggestedRemedy

delete TXD<0>, TXD<31>, TXD<32>, and TXD<63> and move the XGMII line with signal
labels down to align with the arrows.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Make change as requested as the current implementation could cause additional
comments in the future.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **149**   Page 23 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **149.3.2.2.3**   9/12/2019 2:11:23 PM
SORT ORDER: Clause, Subclause, page, line

Cl **149**	*SC* **149.3.2.2.3**	*P* **94**	*L* **3**	#	159

McClellan, Brett   Marvell

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

There's no signals defined as RXD<32> to RXD<63>. Only the XGMII RXD<0> to RXD<31>.

SuggestedRemedy

delete RXD<0>, RXD<31>, RXD<32>, and RXD<63> and move the XGMII line with signal labels down to align with the arrows.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make change as requested as the current implementation could cause additional comments in the future.

Cl **149**	*SC* **149.3.2.2.3**	*P* **94**	*L* **7**	#	151

McClellan, Brett   Marvell

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

arrows are in wrong direction and should point toward the XGMII

SuggestedRemedy

reverse the arrow directions

Response   *Response Status* **C**

ACCEPT.

Cl **149**	*SC* **149.3.2.2.3**	*P* **94**	*L* **7**	#	116

Edem, Brian   Aquantia

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

In Figure 149.7 the eight arrows from the "Input to decoder function 65B block" to the XGMII at the top of the drawing should be pointing up towards the XGMII

SuggestedRemedy

Reverse the arrows

Response   *Response Status* **C**

ACCEPT.

Cl **149**	*SC* **149.3.2.2.3**	*P* **94**	*L* **24**	#	152

McClellan, Brett   Marvell

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

149.3.2.3.2 uses the term 'descrambler' for the receiver. Should probably match it in this figure.

SuggestedRemedy

change 'scrambler' to 'descrambler'

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make the requested change so the Figure matches the text.

Cl **149**	*SC* **149.3.2.2.5**	*P* **96**	*L* **3**	#	82

Tu, Mike   Broadcom

Comment Type **E**   *Comment Status* **D**   *Reject OOS*

Should we use "MultiGBASE-T1" instead of "2.5G/5G/10GBASE-T1"?

SuggestedRemedy

Change "2.5G/5G/10GBASE-T1 PCS" to "MultiGBASE-T1 PCS", and change "2.5G/5G/10GBASE-T1 control codes" to "MultiGBASE-T1 control code".

Proposed Response   *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

This needs to be carefully reviewed to see if this has any other impacts. 2.5G/5G/10GBASE-T1 was intentionally left in the draft in some places.

Commenter is encouraged to resubmit this comment at SA ballot if it is deemed not to impact the draft.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Clause, Subclause, page, line

Cl **149**
SC **149.3.2.2.5**

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9/12/2019 2:11:23 PM

Cl **149**   *SC* **149.3.2.2.14**   *P* **98**   *L* **28**   # 91

Tu, Mike   Broadcom

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

Figure 149-6 shows the PCS bit ordering, not Figure 149-8.

SuggestedRemedy

Change "Figure 149-8" to "Figure 149-6".

Response   *Response Status* **C**

ACCEPT.

Cl **149**   *SC* **149.3.2.2.14**   *P* **98**   *L* **31**   # 90

Tu, Mike   Broadcom

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

The RS-FEC encoder input of 3260 bits consist of tx_group50x65B AND the 10-bit OAM.

SuggestedRemedy

Change line 31 from: "… takes the 3260-bit vector tx_group50x65B, and …"
To: "… takes the 3260-bit vector tx_group50x65B and the 10-bit OAM_field, and …"

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Make the following change to fix an error in the draft.
Change line 31 from: "… takes the 3260-bit vector tx_group50x65B, and …"
To: "… takes the 3260-bit vector, consisting of tx_group50x65B and the 10-bit OAM_field,
and …"

Cl **149**   *SC* **149.3.2.2.17**   *P* **100**   *L* **10**   # 83

Tu, Mike   Broadcom

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

The additive scrambler is added after the encoder and interleaver. So this sentence is not
quite correct.

SuggestedRemedy

Change from: "tx_RSmessage<3259:0> prior to additive scrambling is formed as follows."
To: "tx_RSmessage<3259:0> prior to the RS-FEC (360,326) encoder is formed as follows:"

Also add indents at line 12 and line 14.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Make the requested change to fix an error in the draft.

Cl **149**   *SC* **149.3.2.2.17**   *P* **100**   *L* **12**   # 89

Tu, Mike   Broadcom

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

The mapping on line 12 and line 14 is inconsistent with Figure 149-6. The OAM symbol is
appended after the fifty 65B blocks, and should be the last symbol entering into each RS
FEC encoder. But the mapping on line 12 and line 14 will make the OAM symbol the first
one to enter the RS FEC encoder.

SuggestedRemedy

Change line 12 from: "tx_RSmessage<3259:10> = tx_group50x65B<3249:0>."
To: "tx_RSmessage<3249:0> = tx_group50x65B<3249:0>."

Change line 14 from: "tx_RSmessage<9:0> = OAM_field<9:0>."
To: "tx_RSmessage<3259:3250> = OAM_field<9:0>."

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Make the requested change to fix an error in the draft.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Clause, Subclause, page, line

Cl **149**
SC **149.3.2.2.17**

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9/12/2019 2:11:23 PM

Cl **149**   *SC* **149.3.2.2.17**   *P* **100**   *L* **48**   # 153

McClellan, Brett   Marvell

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

typo

SuggestedRemedy

change 'an' to 'a'

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Make the requested change to fix an error in the draft.

Cl **149**   *SC* **149.3.2.2.18**   *P* **101**   *L* **35**   # 84

Tu, Mike   Broadcom

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

Apply subscript formatting on the index "n" in Dn[0] and Dn[1].

SuggestedRemedy

Apply subscript formatting on the index "n" in Dn[0] and Dn[1].

Response   *Response Status* **C**

ACCEPT.

Cl **149**   *SC* **149.3.2.2.18**   *P* **101**   *L* **42**   # 85

Tu, Mike   Broadcom

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

Use "n" as the common index of symbol numbers in time, in 149.3.2.2.18, 149.3.2.2.19,
149.3.2.2.20, and 149.3.2.2.21.

SuggestedRemedy

1. On page 101, line 35, insert a new paragraph as follows:
"n is an index indicating the symbol number".

2. In in 149.3.2.2.18, 149.3.2.2.19, 149.3.2.2.20, and 149.3.2.2.21, applying the following
changes:
2.1 Change all bit notation "A" to "A_n", where "_" means subscript formatting.
2.2 Change all bit notation "B" to "B_n", where "_" means subscript formatting.
2.3 Change all "G(j)" to "G(n)".
2.4 Change all "P(j)" to "P(n)", all "P(j-1)" to "P(n-1)", and "P(j-2)" to "P(n-2)".
2.5 Change "M(u)" to "M(n)".
2.5 Change "P(u)" to "P(n)".

3. Change page 103, line 6 from "The PAM4 encoded symbols are denoted M(u), where:"
to "The PAM4 encoded symbols are denoted M(n)."
4. Delete page 103, line 8.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Make the changes requested in tu_3ch_02_0919.pdf on slides 4, 5, 6, 7, & 9.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **149**   Page 26 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **149.3.2.2.18**   9/12/2019 2:11:23 PM
SORT ORDER: Clause, Subclause, page, line

Cl **149**   *SC* **149.3.2.2.19**   *P* **101**   *L* **53**   # 133

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

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

Missing comma on parenthetical phrase: "Each pair of bits, {A, B}, where A is the bit arriving first is converted to"

SuggestedRemedy

change "Each pair of bits, {A, B}, where A is the bit arriving first is converted to" to "Each pair of bits, {A, B}, where A is the bit arriving first, is converted to"

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make the requested change to improve readability.

Cl **149**   *SC* **149.3.2.2.20**   *P* **102**   *L* **27**   # 45

Slavick, Jeff   Broadcom

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

The precoder_type is suppose to be assigned to two bits from the InfoFields, which contains 96 bits of information.   So which 2 bits should be used?

SuggestedRemedy

Change "two bits in the InfoField messages" to "the PrecodeSel field from the InfoField messages (see 149.4.2.4.5)"

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make the requested change to increase reader understanding.

Cl **149**   *SC* **149.3.2.2.20**   *P* **102**   *L* **51**   # 22

Wienckowski, Natalie   General Motors

Comment Type **E**   *Comment Status* **A**   *Precoder*

What is "PAM4 mode"?

SuggestedRemedy

Change: PAM4 mode
To: PAM4 encoding

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make the following change to increase reader understanding.

Change: when entering PAM4 mode
To: when transitioning to PAM4 encoding

Cl **149**   *SC* **149.3.2.3**   *P* **104**   *L* **39**   # 86

Tu, Mike   Broadcom

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

Redundant statement?

SuggestedRemedy

Change from: "… separated into a 10-bit OAM field, separated from the 64B/65B blocks, and fifty 64B/65B blocks."
To: "… separated into a 10-bit OAM field and fifty 64B/65B blocks."

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make the requested change to increase reader understanding.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Clause, Subclause, page, line

Cl **149**
SC **149.3.2.3**

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9/12/2019 2:11:23 PM

Cl **149**   *SC* **149.3.2.3**   *P* **105**   *L* **15**   # 134

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

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

"and subject to the timing requirements of 46.1.7" - there are no timing requirements in
46.1.7. 46.1.7 is the mapping of primitives. Do you mean 46.3.1.5 Transmit direction LPI
transition?

SuggestedRemedy

Change 46.1.7 to 46.3.1.5

Response   *Response Status* **C**

ACCEPT.

Cl **149**   *SC* **149.3.2.3.1**   *P* **105**   *L* **37**   # 87

Tu, Mike   Broadcom

Comment Type **T**   *Comment Status* **D**   *Reject OOS*

The description should consider the interleved cases.

SuggestedRemedy

Change from: "… from rx_PAM4_0 to rx_PAM4_1799 (see Figure 149–7)."
To: "… from rx_PAM4_0 to rx_PAM4_1800xL-1, where L is the interleaving depth (see
Figure 149–7 for the L=1 case)."

Proposed Response   *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **149**   *SC* **149.3.6**   *P* **108**   *L* **16**   # 160

McClellan, Brett   Marvell

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

"The transmit function of the PHY initiates a transition to the LPI transmit
mode when it generates 8 RS-FEC frames composed entirely of LPI control characters, as
described in 149.3.2.2.22. The transmit function of the link partner signals the transition
using the sleep signal"
awkward language and why reference the link partner? This text is about the local device
and LPI signaling.

SuggestedRemedy

change to
"The transmit function of the PHY initiates a transition to the LPI transmit mode by
generating the sleep signal comprised of 8 RS-FEC frames composed entirely of LPI
control characters, as described in 149.3.2.2.22. "

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Make the requested change to increase reader understanding.

Cl **149**   *SC* **149.3.6**   *P* **108**   *L* **31**   # 154

McClellan, Brett   Marvell

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

"offset by the link partner's."
awkward language

SuggestedRemedy

change to "offset between the link partners."

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Make requested change to improve clarity.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **149**   Page 28 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **149.3.6**   9/12/2019 2:11:23 PM
SORT ORDER: Clause, Subclause, page, line

Cl **149**   *SC* **149.3.6**   *P* **109**   *L* **37**   # 161

McClellan, Brett   Marvell

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

The prior paragraphs talk about the transmitter and signaling, suddenly this paragraph
changed topic to receiver behavior.

SuggestedRemedy

Change text to
"The end of LPI mode occurs at the transmission of the alert signal indicating the end of
quiet-refresh cycle."
also move this orphaned text prior to figure 149-14

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Make the requested change to increase reader understanding.
The editor will try to move the text.

Cl **149**   *SC* **149.3.6.1**   *P* **109**   *L* **45**   # 162

McClellan, Brett   Marvell

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

"An EEE-capable PHY in SLAVE mode is responsible for synchronizing its Partial PHY
frame Count..."
This is not correct. All PHYs in slave mode must sync.

SuggestedRemedy

change ""An EEE-capable PHY"
to "A PHY"

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Make requested change to fix an error in the draft.

Cl **149**   *SC* **149.3.6.1**   *P* **109**   *L* **47**   # 104

Graba, Jim   Broadcom

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

The wording of this sentence is confusing and redundant. A better specification regarding
PFC counter alignment can be found in 149.4.2.4.10, page 147 line 26:

"During startup, prior to entering the COUNTDOWN state, the SLAVE shall align its
transmit 65B RS-FEC frame to within +0/–4 × S (See Table 149–1 for definition of S.)
partial PHY frames of the MASTER as seen at the SLAVE MDI. The SLAVE InfoField
partial PHY frame Count shall match the MASTER InfoField partial PHY frame Count for
the aligned frame."

SuggestedRemedy

Replace the last two sentences: "For 10GBASE-T1, 5GBASE-T1, and 2.5GBASE-T1 the
SLAVE's PFC24 are +0/–4, +0/–2, and +0/–1 partial frames respectively with respect to the
MASTER's PFC24."
To: "For the requirements on the SLAVE and the MASTER frame alignment, see
149.4.2.4.10."

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Make the suggested change to eliminate redundant specifications in the draft.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **149**   Page 29 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **149.3.6.1**   9/12/2019 2:11:23 PM
SORT ORDER: Clause, Subclause, page, line

Cl **149**   *SC* **149.3.6.1**   *P* **109**   *L* **47**   # 163

McClellan, Brett   Marvell

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

"For 10GBASE-T1, 5GBASE-T1, and 2.5GBASE-T1 the SLAVE's PFC24 are +0/–4, +0/–2, and +0/–1 partial frames respectively with respect to the MASTER's PFC24."
This sentence contradicts the prior sentence which requires the slave to match the PFC24 of the master.

SuggestedRemedy

delete the sentence

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.
Make the change suggested by comment 104 to remove redundant specifications in the draft.
Replace the last two sentences: "For 10GBASE-T1, 5GBASE-T1, and 2.5GBASE-T1 the SLAVE's PFC24 are +0/–4, +0/–2, and +0/–1 partial frames redrafttively with redraftt to the MASTER's PFC24."
To: "For the requirements on the SLAVE and the MASTER frame alignment, see 149.4.2.4.10."

Cl **149**   *SC* **149.3.6.1**   *P* **109**   *L* **52**   # 105

Graba, Jim   Broadcom

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

The formula may result in non-integer output for the RS-FEC frame count.

SuggestedRemedy

Change the formula to: " RS-FEC frame count = floor (PFC24 / 4) mod 96."

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make the suggested change to correct an error in the draft.

Cl **149**   *SC* **149.3.6.1**   *P* **110**   *L* **3**   # 106

Graba, Jim   Broadcom

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

Inconsistent usage of the term "RS-FEC frame count".

The term "RS-FEC frame count" is a continous counter of the RS-FEC frames. But in Table 149-5, it is used to indicate the length of LPI signals.

SuggestedRemedy

In Table 149-5, change the top row of the second column from "RS-FEC frame count" to "Number of RS-FEC frame periods".

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make the suggested change to correct an error in the draft.

Cl **149**   *SC* **149.3.6.1**   *P* **110**   *L* **26**   # 51

Lo, William   Axonne Inc.

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

The paragraph mentions 2 benefits. The first one listed does not sound like a benefit. The intended benefit is that the ALERTs do not overlap, but we determined that they may overlap a little bit given the tolerance in the standard. The fact that the ALERTs mostly do not overlap is still a benefit. Rephrase as shown below.

SuggestedRemedy

Change
"may overlap" to
"mostly will not overlap"

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change: This offsets the MASTER and SLAVE ALERT start times by alert_period/2 and provides the following two benefits: The MASTER and SLAVE allowable ALERT transmissions may overlap and ALERT does not overlap the device's own refresh.

To: This offsets the MASTER and SLAVE ALERT start times by alert_period/2 and provides two benefits. The first benefit is that ALERT transmissions do not overlap with the device's own refresh. The second benefit is that the MASTER and SLAVE ALERT transmissions generally do not overlap, and only overlap at the limits of tolerances.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **149**   Page 30 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **149.3.6.1**   9/12/2019 2:11:23 PM
SORT ORDER: Clause, Subclause, page, line

Cl **149**   *SC* **149.3.6.2**   *P* **111**   *L* **3**   # 107
Graba, Jim   Broadcom
Comment Type   **T**   *Comment Status*   **A**   *EEE*
It is not clear what it means by "the transmitter shall stop transmitting".

SuggestedRemedy
Change the sentence from: "During the quiet period the transmitter shall stop transmitting."

To: "During the quiet period the PCS transmitter shall pass zeros to the PMA via the PMA_UNITDATA.request interface."

Response   *Response Status*   **C**
ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make the suggested change to correct an error in the draft.

Cl **149**   *SC* **149.3.6.3**   *P* **111**   *L* **8**   # 108
Graba, Jim   Broadcom
Comment Type   **T**   *Comment Status*   **A**   *EEE*
The "side-stream scrambler" is in the PCS, not in the PMA.

SuggestedRemedy
Delete "PMA" from this sentence.

Response   *Response Status*   **C**
ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make the suggested change to correct an error in the draft.

Cl **149**   *SC* **149.3.6.3**   *P* **111**   *L* **9**   # 164
McClellan, Brett   Marvell
Comment Type   **T**   *Comment Status*   **A**   *EEE*
There are several problems with this paragraph.   Twice it references 149.3.4 however the Infofield and the training sequence are not specified in 149.3.4. It also fails to refer to the appropriate PAM2 mapping.

SuggestedRemedy
change "Two-level PAM refresh symbols are generated using the PMA side-stream scrambler polynomials described in 149.3.4 and exactly as is shown in Figure 149–11 with the exception that the Infofield consists of a sequence of 128 zeros. The 10-bit OAM symbol to be transmitted is XORed with the last 10 bits of the PAM2 refresh transmission. The training sequence described in 149.3.4 shall be used during the LPI mode, with the scramblers free-running from PCS Reset. "
to "Two-level PAM refresh symbols are generated from the T_n mapping defined in 149.3.5.1 of S_n defined in 149.3.5 with the exception that the Infofield consists of a sequence of 128 zeros. The 10-bit OAM symbol to be transmitted is XORed with the last 10 bits of the PAM2 refresh transmission."

Response   *Response Status*   **C**
ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make the following change to correct an error in the draft.

change "Two-level PAM refresh symbols are generated using the PMA side-stream scrambler polynomials described in 149.3.4 and exactly as is shown in Figure 149–11 with the exception that the Infofield consists of a sequence of 128 zeros. The 10-bit OAM symbol to be transmitted is XORed with the last 10 bits of the PAM2 refresh transmission. The training sequence described in 149.3.4 shall be used during the LPI mode, with the scramblers free-running from PCS Reset. "
to "Two-level PAM refresh symbols are generated from the T_n mapping defined in 149.3.5.1 of S_n defined in 149.3.5, with the exception that the Infofield consists of zeros. The 10-bit OAM symbol to be transmitted is XORed with the last 10 bits of the PAM2 refresh transmission."

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Clause, Subclause, page, line

Cl **149**
SC **149.3.6.3**

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9/12/2019 2:11:23 PM

Cl **149**   *SC* **149.3.6.3**   *P* **111**   *L* **9**   # 109

Graba, Jim   Broadcom

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

Mention of Infofield is distracting. And there aren't 128 InfoField bits.

SuggestedRemedy

Remove " with the exception that the
Infofield consists of a sequence of 128 zeros".

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Make the following change to correct an error in the draft.

change "Two-level PAM refresh symbols are generated using the PMA side-stream
scrambler polynomials described in 149.3.4 and exactly as is shown in Figure 149–11 with
the exception that the Infofield consists of a sequence of 128 zeros. The 10-bit OAM
symbol to be transmitted is XORed with the last 10 bits of the PAM2 refresh transmission.
The training sequence described in 149.3.4 shall be used during the LPI mode, with the
scramblers free-running from PCS Reset. "
to "Two-level PAM refresh symbols are generated from the T_n mapping defined in
149.3.5.1 of S_n defined in 149.3.5, with the exception that the Infofield consists of zeros.
The 10-bit OAM symbol to be transmitted is XORed with the last 10 bits of the PAM2
refresh transmission."

Cl **149**   *SC* **149.3.6.3**   *P* **111**   *L* **11**   # 110

Graba, Jim   Broadcom

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

The statement "The training sequence described in 149.3.4 shall be used during the LPI
mode, with the scramblers free-running from PCS Reset" is confusing and adds no new
information.

SuggestedRemedy

Delete this sentence.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Make the following change to correct an error in the draft.

change "Two-level PAM refresh symbols are generated using the PMA side-stream
scrambler polynomials described in 149.3.4 and exactly as is shown in Figure 149–11 with
the exception that the Infofield consists of a sequence of 128 zeros. The 10-bit OAM
symbol to be transmitted is XORed with the last 10 bits of the PAM2 refresh transmission.
The training sequence described in 149.3.4 shall be used during the LPI mode, with the
scramblers free-running from PCS Reset. "
to "Two-level PAM refresh symbols are generated from the T_n mapping defined in
149.3.5.1 of S_n defined in 149.3.5, with the exception that the Infofield consists of zeros.
The 10-bit OAM symbol to be transmitted is XORed with the last 10 bits of the PAM2
refresh transmission."

Cl **149**   *SC* **149.3.7.3**   *P* **116**   *L* **50**   # 111

Graba, Jim   Broadcom

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

The RFER Monitor state monitors the RS-FEC frame error ratio.

SuggestedRemedy

Change from: "… monitors the received signal for high Reed Solomon frame error ratio."
To: "… monitors the received signal for high RS-FEC frame error ratio."

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Make requested change to improve clarity.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Clause, Subclause, page, line

Cl **149**
SC **149.3.7.3**

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9/12/2019 2:11:23 PM

Cl **149**   *SC* **149.3.7.3**   *P* **117**   *L* **1**   # 112

Graba, Jim   Broadcom

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

"65B-RS_FEC" should be "65B RS-FEC".

SuggestedRemedy

Change "65B-RS_FEC" to "65B RS-FEC".

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make requested change to fix typo.

Cl **149**   *SC* **149.3.8.1**   *P* **117**   *L* **40**   # 113

Graba, Jim   Broadcom

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

In Figure 149-18, there are no states named "RECEIVE_LPI" or "RECEIVE_WAKE".

SuggestedRemedy

1. Change "RECEIVE_LPI" to "RX_L".
2. Change "RECEIVE_WAKE" to "RX_W".
3. Change "Figure 149-18" to "Figure "149-19".

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make suggested changes to fix errors in the draft.

Cl **149**   *SC* **149.3.8.1**   *P* **117**   *L* **45**   # 114

Graba, Jim   Broadcom

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

In Figure 149-16, there are no states named "SEND_LPI" or "SEND_WAKE". In Figure 149-20, there is SEND_WAKE, but no SEND_LPI. The text should refer to the correct states in Figure 149-17.

SuggestedRemedy

1. Change "SEND_LPI" to "TX_L".
2. Change "SEND_WAKE" to "TX_WN".
3. Change "Figure 149-16" to "Figure "149-17".

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make suggested changes to fix errors in the draft.

Cl **149**   *SC* **149.3.8.2**   *P* **121**   *L* **14**   # 53

Lo, William   Axonne Inc.

Comment Type **TR**   *Comment Status* **A**   *EEE*

Fix corner case out of sync condition between Figure 149-17 and 149-20
Scenario:
LPI is send at the initial RS frame just as lp_low_snr=1
TX_L state is entered and tx_lpi_req never gets set to true
Stuck in TX_L state since it is waiting for tx_lpi_active to go true.
Meanwhile in Figure 149-20 stuck at TX_NORMAL since tx_lpi_req remains false so never enters into SEND_SLEEP to set tx_lpi_active to true.
So we are deadlocked Figure 149-17 waiting for tx_lpi_active to go true while Figure 149-20 is waiting for tx_lpi_req to go true.
Remedy below breaks the dead lock.

SuggestedRemedy

Change:
(lp_low_snr + T_TYPE(tx_raw) = (C + D + E + S + T)) * tx_lpi_active
To:
(lp_low_snr + T_TYPE(tx_raw) = (C + D + E + S + T)) * (!tx_lpi_req + tx_lpi_active)

Response   *Response Status* **C**

ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **149**   Page 33 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **149.3.8.2**   9/12/2019 2:11:23 PM
SORT ORDER: Clause, Subclause, page, line

Cl **149**   *SC* **149.3.8.3**   *P* **125**   *L* **3**   *#* 88

Tu, Mike   Broadcom

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

Although both 3.0.14 and 3.2322.14 are copies of each other, I thnk it is better to refer to 3.2322.14 here.

SuggestedRemedy

Change "3.0.14" to "3.2322.14".

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make change to improve understanding. Other Clauses reference their specific bits instead of the generic bits even though they have the same impact.

Cl **149**   *SC* **149.3.9**   *P* **125**   *L* **12**   *#* 127

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

Comment Type   **TR**   *Comment Status* **A**   *OAM*

There is no requirement for the OAM state diagrams.

SuggestedRemedy

Insert new second sentence in first paragraph of 149.3.9 "When OAM is implemented, behavior shall conform to the state diagrams in Figure 149-24 and Figure 149-25." Add new first PICS item to 149.11.4.2.8 OAM:
State diagram behavior | 149.3.9.4 | Conforms to Figure 149-24 and 149-25 | OAM: M | Yes [] No []

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make suggested changes to clarify requirement when OAM is implemented.

Cl **149**   *SC* **149.3.9.1**   *P* **125**   *L* **36**   *#* 138

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

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

"OAM field: The OAM10-bit field" - there is no such phrase as OAM10-bit field... And defining the OAM field as the OAM field isn't useful.

SuggestedRemedy

Change "The OAM10-bit field in each PHY frame" to "A 10-bit field in each PHY frame reserved for the OAM symbol"

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make suggested change to clarify draft.
In addition, on P125 L21 change "OAM 10-bit field" to "10-bit OAM field".

Cl **149**   *SC* **149.3.9.2.12**   *P* **129**   *L* **17**   *#* 27

Wienckowski, Natalie   General Motors

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

SuggestedRemedy

Change: 149B
To: Annex 149B

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Correct the link to improve readability of the draft.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **149**   Page 34 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **149.3.9.2.12**   9/12/2019 2:11:24 PM
SORT ORDER: Clause, Subclause, page, line

Cl **149**   *SC* **149.3.9.2.13**   *P* **130**   *L* **6**   # 14

Anslow, Pete   Ciena

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

Figure 149-23 has been changed so that the coefficient "A2 = 1" is adjacent to an arrow
that just points to another line. Previously, this was an input to a multiply function.
In this version of the figure it is unclear what function is performed with "A2 = 1"

SuggestedRemedy

If the intent is to simply multiply by 1, then reinstate the multiply symbol.
If the intent is different from this then clarify what it is.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove arrows from all "A_x" and just put the name by the symbol/line as is done in Figure
149-10.

Cl **149**   *SC* **149.4.2.1**   *P* **142**   *L* **16**   # 139

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

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

"The MultiGBASE-T1 PMA shall take no longer than 100 ms to enter the PCS_DATA state
after exiting from reset or low power mode." is a non-interoperable way of stating a startup
time requirement. The startup time may be allocated to one training state in one phy and
another training state in another phy. To get interoperability, startup time must be allocated
to phy control states.

SuggestedRemedy

Task force to discuss. (this requires some consensus building - sorry!)

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Change: The MultiGBASE-T1 PMA shall take no longer than 100 ms to enter the
PCS_DATA state after exiting from reset or low power mode.

To: The MultiGBASE-T1 PMA takes no longer than 100 ms to enter the PCS_DATA state
after exiting from reset or low power mode (see Figure 149-33).

And: Delete PICS item PR2 (149.11.4.3.1, page 181 line 47)

Cl **149**   *SC* **149.4.2.2**   *P* **142**   *L* **29**   # 92

Souvignier, Tom   Broadcom

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

The PMA Transmit electrical specifications are given in 149.5.2.

SuggestedRemedy

Change "149.1.3" to "149.5.2".

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Correct the link to improve readability of the draft.

Cl **149**   *SC* **149.4.2.4**   *P* **143**   *L* **31**   # 93

Souvignier, Tom   Broadcom

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

It is not clear what is meant by "each InfoField" since the PFC 24 and CRC16 values will be
changing after each PAM2 PHY training frame.

SuggestedRemedy

Change this sentence from: "Each InfoField shall be transmitted at least 256 times …"
To: "InfoField shall be transmitted at least 256 times with each change to octets 7-10 to
ensure detection at link partner."

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Make the suggested change to improve clarity.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **149**   Page 35 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **149.4.2.4**   9/12/2019 2:11:24 PM
SORT ORDER: Clause, Subclause, page, line

Cl **149**   *SC* **149.4.2.4**   *P* **143**   *L* **37**   # 96

Souvignier, Tom   Broadcom

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

Field "MSG24" in Figure 149-27 not defined. Figure 149-27 not needed since it is shown in figures 149-28 and Figure 149-29 for both PMA states.

SuggestedRemedy

Remove Figure 149-27 and change first sentence of paragraph on page 143 line 30 to "The 12-octet InfoField shall include the fields in 149.4.2.4.2 through 149.4.2.4.8, also shown in Figure 149–28 and Figure 149–29."

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make suggested change to remove issue which could lead to comments during SA ballot.

Cl **149**   *SC* **149.4.2.4**   *P* **143**   *L* **46**   # 95

Souvignier, Tom   Broadcom

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

Figure 149–28—InfoField TRAINING format octets 8/9/10 should be labeled "PHY Capability Bits" as indicated in subclause 149.4.2.4.5 and Table 149-12

SuggestedRemedy

Change "UsrCfgCap" to "PHY Capability Bits" in Figure 149–28

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make suggested change to remove issue which could lead to comments during SA ballot.

Cl **149**   *SC* **149.4.2.4.5**   *P*   *L*   # 168

Razavi, Alireza   Aquantia

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

SuggestedRemedy

Response   *Response Status* **C**

REJECT.

empty comment

Cl **149**   *SC* **149.4.2.4.5**   *P* **145**   *L* **45**   # 73

Tu, Mike   Broadcom

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

Need to define the bit mapping of InterleaverDepth and PrecodeSel.

SuggestedRemedy

Change line 45 from: "… PHY capability bits is Oct10<2:1> = InterleaverDepth, Oct10<4:3> = PrecodeSel, …"
To: "… PHY capability bits is Oct10<2:1> = InterleaverDepth[1:0], Oct10<4:3> = PrecodeSel[1:0], …"

Response   *Response Status* **C**

ACCEPT.

Cl **149**   *SC* **149.4.2.4.5**   *P* **145**   *L* **47**   # 72

Tu, Mike   Broadcom

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

Need to define the bit mapping of VendorSpecificData.

SuggestedRemedy

Change line 47 from" "Oct8<7:0> = VendorSpecificData, and Oct9<7:0> = VendorSpecificData."
To: "Oct8<7:0> = VendorSpecificData[7:0], and Oct9<7:0> = VendorSpecificData[15:8]."

Response   *Response Status* **C**

ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Clause, Subclause, page, line

Cl **149**
SC **149.4.2.4.5**

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Cl **149**	*SC* **149.4.2.4.6**	*P* **146**	*L* **16**	*#* 136

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

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

The only constraint on DataSwPFC24 is that it is 24 bits and a multiple of 16. A PFC interval is 450 baud intervals, which at 10 gig is 80 nsec. As it is, this allows startup to hang for 16776960*80nsec = 1.342 seconds, which is WAY too long for a 100 msec total startup to allocate for a synchronization countdown after both receivers are reporting they are OK. A constraint of 500 (40 usec) should be more than enough, and would still be reasonable at 2.5 gig (160 usec). Also, DataSwPFC24 could be so close to the current PFC that the link partner might not be able to sync.

SuggestedRemedy

Add new final sentence to end of paragraph in 149.4.2.4.6: "DataSwPFC24 shall be a minimum of 64 and a maximum of 512 from the current PFC24 value."

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Add new final sentence to end of paragraph in 149.4.2.4.6: "DataSwPFC24 shall be a minimum of 4081 and a maximum of 4785 from the current PFC24 value."

Cl **149**	*SC* **149.4.2.4.10**	*P* **147**	*L* **26**	*#* 94

Souvignier, Tom   Broadcom

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

The SLAVE should align its tranmit frames before it starts transmision. Otherwise MASTER will need to redo frame alignments during training.

SuggestedRemedy

Change from: "During startup, prior to entering the COUNTDOWN state, the SLAVE shall align …"
To: "During startup, prior to entering the TRAINING state, the SLAVE shall align …"

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make requested change to fix deficiency in current draft.

Cl **149**	*SC* **149.4.2.4.10**	*P* **147**	*L* **35**	*#* 169

Razavi, Alireza   Aquantia

Comment Type **T**   *Comment Status* **A**   *Startup / late*

To ensure interoperability during the training phase, certain timing allocations between Master, Slave and other steps of training must be observed. We propose to the text of 802.3bz for interoperability and just scale the timing of 10G mode and deduct the timing for PCS_TEST that is set by min_wait_timer.

SuggestedRemedy

tModify FIgure 149_33 as attached and Include the associated Table 145.15 in section 149.4.2.4.10 page 147, line 35 to read as follows

MASTER	SLAVE	MAX REQUIRED TIME
Traning	Silent	40.00 msec
Training	Training	57.02 msec
PCS Test	PCS Test	0.98 msec
TOTAL		98.00 msec

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Implement the changes defined on slide 5 of zimmerman_3ch_01b_0919.pdf, with editorial license to conform to IEEE 802.3 stlye.

Editorial license to add necessary PICS.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Clause, Subclause, page, line

Cl **149**
SC **149.4.2.4.10**

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Cl **149**   *SC* **149.4.2.6.4**   *P* **151**   *L* **25**   # 15

Wienckowski, Natalie   General Motors

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

In state diagrams, the transitions shouldn't include "=true" or "=false", instead you should have the variable_name for true and !variable_name for false.

SuggestedRemedy

In Figure 149-32, change the following:
L25 & L31: "send_s_sigdet = false" to "!send_s_sidgdet"
L39: "power_on = true" to "power_on"
L40: "mr_main_reset = true" to "mr_main_reset"
L40: "mr_autoneg_enable = true" to "mr_autoneg_enable"
L49: "mr_autoneg_enable = false" to "!mr_autoneg_enable"

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make the suggested change to match the IEEE802 style. In addition, correct the spelling of send_s_sigdet.

Cl **149**   *SC* **149.4.2.6.4**   *P* **151**   *L* **25**   # 135

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

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

typo: send_s_sidget = true

SuggestedRemedy

change send_s_sidget to send_s_sigdet

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make suggested change to fix typo.

Cl **149**   *SC* **149.4.2.6.4**   *P* **151**   *L* **25**   # 115

Edem, Brian   Aquantia

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

Figure 149-32, transition from SIGDET_WAIT to SILENT_WAIT the condition is misspelled

SuggestedRemedy

Change send_s_sidget to send_s_sigdet

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make suggested change to fix typo.

Cl **149**   *SC* **149.4.5**   *P* **155**   *L* **4**   # 16

Wienckowski, Natalie   General Motors

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

In state diagrams, the transitions shouldn't include "=true" or "=false", instead you should have the variable_name for true and !variable_name for false.

SuggestedRemedy

In Figure 149-33, change the following:
L4 & L12: "auto_neg_imp = true" to "auto_neg_imp"
L4 & L12: "mr_autoneg_enable = true" to "mr_autoneg_enable"
L6 & L14: "auto_neg_imp = false" to "!auto_neg_imp"
L6 & L14: "mr_autoneg_enable = false" to "!mr_autoneg_enable"
L45: "hi_rfer = false" to "!hi_rfer"
L46: "hi_rfer = true" to "hi_rfer"
L46: "block_lock = true" to "block_lock"
L47: "block_lock = false" to "!block_lock"

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make the suggested change to match the IEEE802 style.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **149**   Page 38 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **149.4.5**   9/12/2019 2:11:24 PM
SORT ORDER: Clause, Subclause, page, line

Cl **149**   *SC* **149.4.5**   *P* **156**   *L* **2**   # 17

Wienckowski, Natalie   General Motors

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

In state diagrams, the transitions shouldn't include "=true" or "=false", instead you should have the variable_name for true and !variable_name for false.

SuggestedRemedy

In Figure 149-34, change the following:
L2: "auto_neg_imp = true" to "auto_neg_imp"
L2: "mr_autoneg_enable = true" to "mr_autoneg_enable"
L4: "auto_neg_imp = false" to "!auto_neg_imp"
L4: "mr_autoneg_enable = false" to "!mr_autoneg_enable"
L12: "pcs_data_mode = true" to "pcs_data_mode"

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make the suggested change to match the IEEE802 style.

Cl **149**   *SC* **149.5.1.1**   *P* **158**   *L* **24**   # 46

Gubow, Marty   Keysight Technologies

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

The most common transmitter connection to an oscilloscope utilizes two 50-ohm channels. Figure 149-36 should be updated.

SuggestedRemedy

Receommned new figure 149-36

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace Figure 149-36 with the figure in gubow_3ch_01a_0919.pdf.

Cl **149**   *SC* **149.7.1.1**   *P* **164**   *L* **30**   # 142

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

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

While Fmax is used for several link segment parameters, it only gets defined for insertion loss. This definition (Equation 149-18) needs to be moved up to 149.7

SuggestedRemedy

Insert new second paragraph in 149.7: "For the three different PHY types, link segment parameters are specified to different upper frequencies, given by the parameter Fmax shown in Equation 149-17".
Insert (new) Equation 149-17, which is the current Equation 149-18: Fmax = 4000 X S
Followed by "See Table 149-1 for definition of S."
Delete lines 30 through 33, so that 149.7.1.1 after the equation (currently 149-17, now 149-18) reads:
f is the frequency in MHz; 1 <= f <= Fmax.

The insertion loss is illustrated in Figure 149-42.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make suggested change to clarify draft.

Cl **149**   *SC* **149.7.1.3**   *P* **165**   *L* **31**   # 140

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

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

The Return loss section actually is 3 subclauses, one for each PHY type.

SuggestedRemedy

Divide 149.7.1.3 into 149.7.1.3.1 2.5GBASE-T1 link segment return loss, 149.7.1.3.2 5GBASE-T1 link segment return loss, and 149.7.1.3.3 10GBASE-T1 link segment return loss.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make suggested change to help the reader.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Clause, Subclause, page, line

Cl **149**
SC **149.7.1.3**

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Cl **149**	*SC* **149.7.1.3**	*P* **166**	*L* **24**	# 62

Ohni, Josef   MD Elektronik

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

In the equation defined by parts (149–22). The frequency point 480/2N belongs only to the first part. The frequency point 3000 belongs to the second and third part. This ist not consistent.

SuggestedRemedy

Change the second part "480/2N ≤ f ≤ 3000 MHz" to "480/2N ≤ f < 3000"

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make change to fix typo.

Cl **149**	*SC* **149.7.1.3**	*P* **167**	*L* **23**	# 141

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

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

While the title for Figure 149-43 says there are 5 curves, the figure only shows 2 curves (this is due to frequency overlaps), but is confusing. Also, 2.5G no longer has the "N" factor, which makes the figure even more confusing.

SuggestedRemedy

Divide Figure 149-43 into 3 figures, one for 2.5G, one for 5G and one for 10G. Alternately, delete the figure.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make suggested change to help the reader.

Cl **149**	*SC* **149.7.1.4**	*P* **167**	*L* **35**	# 63

Ohni, Josef   MD Elektronik

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

In the equation defined by parts (149–24). The frequency point 750 belongs to the first and second part.

SuggestedRemedy

Change the first part "30 ≤ f ≤ 750 MHz" to "30 ≤ f < 750 MHz"

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make change to fix typo.

Cl **149**	*SC* **149.7.2.1**	*P* **169**	*L* **9**	# 143

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

Comment Type **TR**   *Comment Status* **A**   *Reject OOS*

It is important to limit the noise ingress even outside the bandwidth of the PHY, especially if multiple rates of PHYs are to be used together in the same system. As such, the PSANEXT and PSAFEXT characteristic needs to be specified to the same frequency for all PHY types

SuggestedRemedy

Replace Fmax on Page 169 line 9 and Page 170 line 6 with 4000 MHz.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Make the change in the Suggested Remedy.

Straw poll #1

I believe we need to do something for the higher frequency PSANEXT and PSAFEXT for 2.5GBASE-T1 and 5GBASE-T1.

Y: 22
N: 2

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Clause, Subclause, page, line

Cl **149**
SC **149.7.2.1**

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Cl **149**   *SC* **149.9.2.1**   *P* **172**   *L* **24**   # 144

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

Comment Type **E**   *Comment Status* **A**   *testing*

IEEE Std 802.3 does not specify equipment, and can't put a 'shall' on "All equipment subject to this clause...shall conform to the potential environmental stresses", or to the systems integrating the PHY (149.9.2.2). 802.3cg had similar language in ballots and the suggested language is drawn from the remedies there.

SuggestedRemedy

Change "shall conform" to "is expected to conform" in 149.9.2.1, and "shall comply" with "is expected to comply" in 149.9.2.2.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make the suggested change to conform with latest agreed text in other projects.

Also, delete PICS ES3 and ES4.

Cl **149**   *SC* **149.9.2.2**   *P* **172**   *L* **43**   # 145

Zimmerman, George   CME Consulting/ADI, APL Gp, Aquantia, BMW, Cisco

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

IEEE Std 802.3 does not restrict the EMC test methods ("PHY shall be tested according to CISPR 25 test methods"). The integrating system will specify the test methods to be used, and even though they usually are CISPR25, there is no need to put that here, and inappropriate to require it.

SuggestedRemedy

Delete "The PHY shall be tested according to CISPR 25 test methods defined to measure the PHY's EMC performance in terms of radio frequency (RF) immunity and RF emissions."

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

While automotive testing requires the use of CISPR 25, other applications may not use this. P172 L45-48 make it clear that CISPR25 is used for automotive applications.

Remove the text as suggested and remove PICS ES5 on P190 L20.

Cl **149**   *SC* **149.10**   *P* **173**   *L* **23**   # 49

Lo, William   Axonne Inc.

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

Table fix gap in column 3 numbers

SuggestedRemedy

Remove the gaps in all the numbers in column 3.

Proposed Response   *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **149**   *SC* **149.11.4.1**   *P* **175**   *L* **28**   # 28

Wienckowski, Natalie   General Motors

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

SuggestedRemedy

Make "Clause 98" in Feature column a hyperlink.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Correct the link to improve readability of the draft.

Cl **149**   *SC* **149.11.4.2.1**   *P* **176**   *L* **27**   # 29

Wienckowski, Natalie   General Motors

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

Incorrect link trying to go outside the document.

SuggestedRemedy

Change: 149.3.4.2 to 149.3.5.1 (hyperlink in the document)

Response   *Response Status* **C**

ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Clause, Subclause, page, line

Cl **149**
SC **149.11.4.2.1**

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Cl **149**   *SC* **149.11.4.3.4**   *P* **184**   *L* **6**   # 30

Wienckowski, Natalie   General Motors

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

SuggestedRemedy
Make "Table 149-10" in Feature column a hyperlink.

Response   *Response Status*   **C**
ACCEPT.

Cl **149**   *SC* **149.11.4.3.4**   *P* **184**   *L* **7**   # 31

Wienckowski, Natalie   General Motors

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

SuggestedRemedy
Make "Table 149-11" in Feature column a hyperlink.

Response   *Response Status*   **C**
ACCEPT.

Cl **149**   *SC* **149.11.4.3.6**   *P* **185**   *L* **33**   # 32

Wienckowski, Natalie   General Motors

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

SuggestedRemedy
Make "Clause 98" in Feature column a hyperlink.

Response   *Response Status*   **C**
ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Correct the link to improve readability of the draft.

Cl **149**   *SC* **149.11.4.3.6**   *P* **185**   *L* **38**   # 33

Wienckowski, Natalie   General Motors

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

SuggestedRemedy
Make "Figure 149–32" in Feature column a hyperlink.

Response   *Response Status*   **C**
ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch
D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it
is not within the scope of the recirculation ballot.

Correct the link to improve readability of the draft.

Cl **149**   *SC* **149.11.4.6**   *P* **189**   *L* **27**   # 34

Wienckowski, Natalie   General Motors

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

SuggestedRemedy
Make "149.5.2" in Feature column a hyperlink.

Response   *Response Status*   **C**
ACCEPT.

Cl **149**   *SC* **149.11.4.6**   *P* **189**   *L* **28**   # 35

Wienckowski, Natalie   General Motors

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

SuggestedRemedy
Make "149.5.3" in Feature column a hyperlink.

Response   *Response Status*   **C**
ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **149**   Page 42 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **149.11.4.6**   9/12/2019 2:11:24 PM
SORT ORDER: Clause, Subclause, page, line

Cl **149A**   *SC* **149A.2**   *P* **192**   *L* **36**   # 61

Wienckowski, Natalie   General Motors

Comment Type **E**   *Comment Status* **A**   *testing*

Clarify that the environmental conditions in 149A are the applicable conditions for the defined test method.

SuggestedRemedy

Change: Measurements are performed at ...
To: These test methods are applicable for temperature of …

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change: Measurements are performed at 23°C ± 5°C and relative humidity of 25% to 75%.

To: These test methods are applicable for temperature and humidity as specified by IEC 62153-4-7.

Cl **149A**   *SC* **149A.5.4**   *P* **197**   *L* **41**   # 36

Wienckowski, Natalie   General Motors

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

SuggestedRemedy

Make "Figure 149A–3" in Feature column a hyperlink.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Correct the link to improve readability of the draft.

Cl **149B**   *SC* **149B.4.2.3**   *P* **202**   *L* **8**   # 50

Lo, William   Axonne Inc.

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

Font size of text in boxes and text in arrows are not consistent

SuggestedRemedy

Make font sizes of text consistent

Response   *Response Status* **C**

ACCEPT.

This comment does not apply to the substantive changes between IEEE P802.3ch D2.0 and D2.1 or the unsatisfied negative comments from earlier ballots. Hence it is not within the scope of the recirculation ballot.

Make all text size 8 to be consistent.

Cl **149B**   *SC* **149B.4.2.3**   *P* **202**   *L* **15**   # 19

Wienckowski, Natalie   General Motors

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

Different font sizes in Figure 149B-2

SuggestedRemedy

Change all text in figure to be 8.0 pt

Response   *Response Status* **C**

ACCEPT.

Cl **149B**   *SC* **149B.4.2.3**   *P* **202**   *L* **15**   # 18

Wienckowski, Natalie   General Motors

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

In state diagrams, the transitions shouldn't include "=true" or "=false", instead you should have the variable_name for true and !variable_name for false.

SuggestedRemedy

In Figure 149B-2, change the following:
L15 & L28: "mr_rx_clear_rec=true" to "mr_rx_clear_rec"
L28: "mr_rx_clear_rec=false" to "!mr_rx_clear_rec"

Response   *Response Status* **C**

ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **149B**   Page 43 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **149B.4.2.3**   9/12/2019 2:11:24 PM
SORT ORDER: Clause, Subclause, page, line

Cl **149B**   *SC* **149B.4.2.3**   *P* **202**   *L* **38**   # 20

Wienckowski, Natalie   General Motors

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

Different font sizes in Figure 149B-3

SuggestedRemedy

Change all text in figure to be 8.0 pt

Response   *Response Status* **C**

ACCEPT.

Cl **149B**   *SC* **149B.4.2.3**   *P* **202**   *L* **44**   # 65

Tu, Mike   Broadcom

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

The variable "mr_tx_request_rec_clear" is not defined.

SuggestedRemedy

In Figure 149B-3, the transition condition should be changed to: "mr_tx_clear_rec = true".

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change "mr_tx_request_rec_clear = true" to "mr_tx_clear_rec"

Cl **149B**   *SC* **149B.4.2.3**   *P* **202**   *L* **44**   # 21

Wienckowski, Natalie   General Motors

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

In state diagrams, the transitions shouldn't include "=true" or "=false", instead you should have the variable_name for true and !variable_name for false.

SuggestedRemedy

In Figure 149B-3, change the following"
L44: "mr_tx_request_rec_clear = true" to "mr_tx_request_rec_clear"
L50: "mr_rx_rec_cleared = true" to "mr_rx_rec_cleared"

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

In Figure 149B-3, change the following"
L44: "mr_tx_request_rec_clear = true" to "mr_tx_clear_rec"
L50: "mr_rx_rec_cleared = true" to "mr_rx_rec_cleared"

Cl **149C**   *SC* **149C.1**   *P* **203**   *L* **11**   # 38

Wienckowski, Natalie   General Motors

Comment Type **T**   *Comment Status* **D**   *149C*

149C has no informationon return loss

SuggestedRemedy

Change: provides information on insertion loss and return loss parameters
To: provides information on insertion loss parameters

Proposed Response   *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **Annex**   *SC* **149C.1**   *P* **203**   *L* **12**   # 56

DiMinico, Christopher   MC Communications

Comment Type **TR**   *Comment Status* **A**   *149C*

Annex 149C missing information on return loss parameters of the channel defined between TX function and RX function illustrated in Figure 149C–1.

SuggestedRemedy

See presentation diminico_3ch_02_0919.pdf

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add the text proposed in diminico_3ch_02c_0919.pdf with editorial license to conform to IEEE 802.3 style.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **Annex**   Page 44 of 45
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **149C.1**   9/12/2019 2:11:25 PM
SORT ORDER: Clause, Subclause, page, line

Cl **Annex**   *SC* **149C.1**   *P* **203**   *L* **35**   # 55

DiMinico, Christopher   MC Communications

Comment Type   **T**   *Comment Status* **A**   149C

Change Max PCB length from 4.5" to 3" more representative of MAX implementations.

SuggestedRemedy

In Figure 149C–1 delete 4.5" two places.
In equation (149C–1) change 4.5" to 3".
In equation (149C–4) change 4.5" to 3".
Change Table 149C–1 values per supporting presentation.

diminico_3ch_01_0919.pdf

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Make the suggested text changes on slide 2 and change Table 149C-1 per slide 3 of
diminico_3ch_01a_0919.pdf.

In addition to the length change, the lengths were changed to SI units, mm.

Cl **Annex**   *SC* **149C.2**   *P* **203**   *L* **43**   # 54

DiMinico, Christopher   MC Communications

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

SuggestedRemedy

correct text for space circ...uit

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change "circ uit" to "circuit"

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Clause, Subclause, page, line

Cl **Annex**
SC **149C.2**

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