Cl **FM** *SC* **FM** *P* **1** *L* **10** # 473

Dawe, Piers
Nvidia

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

Missing amendment number

SuggestedRemedy

Insert amendment number or a placeholder; here, p 10 L 4, p 26 L 3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Update spec to reflect this is ammendment #14.

Cl **FM** *SC* **FM** *P* **1** *L* **32** # 475

Dawe, Piers
Nvidia

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

"The purpose of the amendment is to add" is not the usual language

SuggestedRemedy

Follow precedent where appropriate.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: The purpose of the amendment is to add

To: This amendment adds

Cl **FM** *SC* **FM** *P* **1** *L* **32** # 474

Dawe, Piers
Nvidia

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

IEEE Std 802.3yy-20xx

SuggestedRemedy

Add the known amendments, as listed in pages 11 to 13, keeping this placeholder or not as appropriate

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **FM** *SC* **FM** *P* **2** *L* **1** # 476

Dawe, Piers
Nvidia

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

This material should appear on the first page.

SuggestedRemedy

Reduce the font size, line spacing and/or space after the title on the first page as needed

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This goes onto the 2nd page in many drafts including, 3dj, 3dg, 3da, etc.

Cl **FM** *SC* **FM** *P* **3** *L* **1** # 477

Dawe, Piers
Nvidia

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

Abstract and keywords should appear on the page with the special footer beginning "The Institute of Electrical and Electronics Engineers, Inc."

SuggestedRemedy

Move the abstract and keywords to the right place

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This is the same as other drafts including, 3dj, 3dg, etc.

Cl **FM** *SC* **FM** *P* **3** *L* **4** # 257

Steve, Gorshe
Microchip Technology

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

Add MultiG PHYs to the list

SuggestedRemedy

Add 100M+MultiGBASE-T1, 100M+MultiGBASE-V1, MultiG+100MBASE-T1 and MultiG+100MBASE-V1 to the list

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **FM** *SC* **FM** *P* **3** *L* **7** # 138

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

-AT1 and -AV1 PHY types need to be added to the list of Keywods.

SuggestedRemedy

Add to the list of Keywords: MultiGBASE-AT1 and MultiGBASE-AV1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **FM** *SC* **FM** *P* **13** *L* **10** # 20

Ran, Adee Cisco Systems

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

802.3dk-2026 was approved in March 2026

SuggestedRemedy

Change 202x to 2026

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **FM** *SC* **FM** *P* **13** *L* **10** # 479

Dawe, Piers Nvidia

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

802.3dk is published now

SuggestedRemedy

Change 202x to 2026

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **FM** *SC* **FM** *P* **13** *L* **16** # 21

Ran, Adee Cisco Systems

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

The amendments list does not include 802.3dj and 802.3dr, which are both expected to complete before 802.3dm.

SuggestedRemedy

Add the missing amendments 802.3dr-2026 and 802.3dj-202x, with abstracts based on the latest drafts respectively.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Make the requested change.

Rquest the FM template be updated to include the additional drafts. It hasn't been updated since January 2025.

Cl **FM** *SC* **FM** *P* **13** *L* **24** # 480

Dawe, Piers Nvidia

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

Clause 200 - not

SuggestedRemedy

Clause 191, Clause 192 and Annex 191A

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by #139.

Cl **FM** *SC* **FM** *P* **13** *L* **24** # 139

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

The Clause numbers weren't updated.

SuggestedRemedy

Change: Clause 200
To: Clauses 191 and 192 and Annex 191A.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **FM** *SC* **FM** *P* **13** *L* **24** # 237

Muma, Scott — Microchip Technology Inc.

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

Clause 200 is mentioned but not part of the draft amendment.

SuggestedRemedy

Change Clause 200 to appropriate close number(s) with editorial license.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See #139.

Cl **FM** *SC* **FM** *P* **26** *L* **48** # 481

Dawe, Piers — Nvidia

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

Reviewers and the publication editor need to know which other IEEE 802.3 amendment projects running in parallel that modified the same text and tables the editors have taken into account.

SuggestedRemedy

List them here. Preferably, list all the amendment projects running in parallel, in two groups: those that affect this amendment, and those that don't. Also, it is worth providing summary information specifically for, and at the start of, clauses such as Clause 45 where this is most important.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This has not been done in any draft I have checked, including all current ammendments to 802.3-2022.

Cl **00** *SC* **0** *P* **3** *L* **8** # 385

Maguire, Valerie — Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

MultiGBASE-AT1 and MultiGBASE-AV1 should be added to keywords. Consider order of keywords.

SuggestedRemedy

Insert, ", MultiGBASE-AT1, MultiGBASE-AV1" after IEEE 802.3dm™

Move, "automotive Ethernet" to before IEEE 802.3dm™

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **00** *SC* **0** *P* **8** *L* # 81

Lusted, Kent — Synopsys

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

Add the ballot committee members

SuggestedRemedy

Add the ballot committee members

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1** *P* **28** *L* **42** # 386

Maguire, Valerie — Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

Update MultiGBASE-A, MultiGBASE-AT1 and MultiGBASE-AV1 definitions to better align with objectives. Correct missing "that transmit" and clarify that speed is less than or equal to 1000 Mb/s in the MultiGBASE-A definition.

SuggestedRemedy

Replace definitions of MultiGBASE-A, MultiGBASE-AT1 and MultiGBASE-AV1 with:

1.4.405b MultiGBASE-A: PHYs that belong to the set of specific asymmetric PHYs that transmit at speeds in excess of 1000 Mb/s in one direction and less than or equal to 1000 Mb/s in the other direction, with the direction of asymmetry and high-speed rate determined at link startup for at least one transmission rate, including MultiGBASE-AT1 and MultiGBASE-AV1. (See IEEE Std 802.3, Clause 191.)

1.4.405c MultiGBASE-AT1: IEEE 802.3 Physical Layer specification for an asymmetric rate Ethernet full duplex point-to-point link operating at 2.5 Gb/s, 5 Gb/s, or 10 Gb/s in one direction and 100 Mb/s in the other direction, with the direction of asymmetry and high-speed rate determined at link startup for at least one transmission rate, over a single shielded balanced pair of conductors. (See IEEE Std 802.3, Clause 192.)

1.4.405d MultiGBASE-AV1: IEEE 802.3 Physical Layer specification for an asymmetric rate Ethernet full duplex point-to-point link operating at 2.5 Gb/s, 5 Gb/s, or 10 Gb/s in one direction and 100 Mb/s in the other direction, with the direction of asymmetry and high-speed rate determined at link startup for at least one transmission rate, over a single coaxial conductor. (See IEEE Std 802.3, Clause 192.)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.3** *P* **27** *L* **9** # 326

Simms, William NVIDIA

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

use of british/canadian spelling for 'analogue' is inconsistent with other instances in the document

SuggestedRemedy

change analogue to analog

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.4.2.249** *P* **28** *L* **36** # 259

Steve, Gorshe Microchip Technology

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

The title and text of 1.4.249a are inconsistent

SuggestedRemedy

The title is “MultiG+100MBASE,” which pertains to Clause 192. However, the text contains the enumeration used in Clause 191 along with a reference to that clause. It appears that this clause should be re-written to reflect Clause 192.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This applies to 191, not 192. There is no "A" in the name. This is the group of 2.5G/5G/10G+100M PHYs abbreviated as MultiG+100M.

Cl **1** *SC* **1.4.46** *P* **27** *L* **40** # 258

Steve, Gorshe Microchip Technology

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

The title of 1.4.46g is inconsistent with the text

SuggestedRemedy

The title is “100M+MultiGBASE,” which pertains to Clause 192. However, the text contains the enumeration used in Clause 191 along with a reference to that clause. It appears that this clause should be re-written to reflect Clause 192.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This applies to 191, not 192. There is no "A" in the name. This is the group of 100M+2.5G/5G/10G PHYs abbreviated as 100M+MultiG.

Cl **1** *SC* **1.4.46g** *P* **27** *L* **40** # 327

Simms, William NVIDIA

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

1000 Mb/s used is inconsistent with 1 Gb/s langauge used on same page.

SuggestedRemedy

change 1000 Mb/s to 1 Gb/s

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change 1 Gb/s to 1000 Mb/s.

We have 1000BASE, not 1GBASE PHYs.

Cl **1** *SC* **1.4.249** *P* **28** *L* **37** # 328

Simms, William NVIDIA

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

1000 Mb/s used is inconsistent with 1 Gb/s langauge used on same page.

SuggestedRemedy

change 1000 Mb/s to 1 Gb/s

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change 1 Gb/s to 1000 Mb/s.

We have 1000BASE, not 1GBASE PHYs.

Cl **1** *SC* **1.4.405** *P* **28** *L* **43** # 260

Steve, Gorshe Microchip Technology

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

Incorrect clause reference in 1.4.405b

SuggestedRemedy

The reference should be to Clause 192 rather than 191

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** SC **1.4.405** P **28** L **43** # 329

Simms, William NVIDIA

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

1000 Mb/s used is inconsistent with 1 Gb/s langauge used on same page.

SuggestedRemedy

change 1000 Mb/s to 1 Gb/s

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change 1 Gb/s to 1000 Mb/s.

We have 1000BASE, not 1GBASE PHYs.

Cl **1** SC **1.4.405b** P **28** L **41** # 82

Lusted, Kent Synopsys

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

The defintion for MultiGBASE-A references Clause 191 in the (). However, the PCS PMD and medium description of MultiGBASE-A is in Clause 192.

SuggestedRemedy

Change "(See IEEE Std 802.3, Clause 191.)" to
"(See IEEE Std 802.3, Clause 192.)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** SC **1.5** P **29** L **1** # 144

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

ACT and TDD were added as abreviations when these were included in the Clause names. These have been removed from the Clause names.

SuggestedRemedy

Delete 1.5 and its contents.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** SC **1.5** P **29** L **6** # 92

Kim, Yong General Motors

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

"TDD". Time Division Duplex is unclear. I heard and referred to "TDD" so long that I did not question it unitl revewing the draft. "Duplex" is misnomer and sounds more marketing. Time Division Multiplex, or Time Divisoin Simplex woule be more correct and be more aligned with common reference to this type of technique. Why create confusion by creating a new term when perfectly well-understood term is available.

SuggestedRemedy

Consider TDM, which is more well-understood term for this operation.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See #144 which deletes this text.

Cl **30** SC **30.3.2.1.3a** P **31** L **20** # 382

Maguire, Valerie Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

Missing indent.

SuggestedRemedy

Insert hanging indent so that LS-PATH wraps correctly

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** SC **45.2.1** P **33** L **8** # 22

Ran, Adee Cisco Systems

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

Typo: throug

SuggestedRemedy

Change to through

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **33** *L* **9** # 332

Wang, Frank — Realtek Semiconductor Corp.

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

typo

SuggestedRemedy

change "throug" to "through"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1** *P* **33** *L* **22** # 187

Wienckowski, Natalie — IVN Solutions LLC; Ethernovia & Bosch

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

Add note to registers to indicate they are also used for -V1 type PHYs.

SuggestedRemedy

Add the following, existing, registers in Table 45-3 (1.2309, 1.2310, 1.2314, 1.2315, 1.2316, 1.2317). Add a "b" superscript to the name.
Add note "b" at the end of the table: This register also applies to all MutltiG type -V1 PHYs.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.7.4** *P* **34** *L* **22** # 51

Muma, Scott — Microchip

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

Add row to table 45–9 for MultiGBASE-AT1, MultiGBASE-AV1 transmit fault description location 202.4.2.2

SuggestedRemedy

As per comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by #189.

Cl **45** *SC* **45.2.1.7.4** *P* **34** *L* **22** # 189

Wienckowski, Natalie — IVN Solutions LLC; Ethernovia & Bosch

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

Add transmit fault reference to Clause 192

SuggestedRemedy

Change Editor's note to to add: and insert a new row at the end of the table.
Add new row at the end of the table: MultiGBASE-AT1, MultiGBASE-AV1 | 192.4.2.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.7.5** *P* **34** *L* **30** # 333

Wang, Frank — Realtek Semiconductor Corp.

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

insert a space between "table" and "("

SuggestedRemedy

change "table(unchanged" to "table (unchanged"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.10** *P* **35** *L* **1** # 334

Wang, Frank — Realtek Semiconductor Corp.

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

remove period

SuggestedRemedy

change "shown.)" to "shown)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.10** *P* **35** *L* **9** # 95

Huber, Thomas — Nokia

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

In table 45-14, V1 is being added to the name, but this is not shown as a change

SuggestedRemedy

Underline the "/V1" in "Base-T1/V1 extended abilities"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.16** *P* **36** *L* **5** # 140

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

update Editor's instructions

SuggestedRemedy

Change: and insert new row 3
To: and insert new rows 3 and 4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.16** *P* **36** *L* **14** # 96

Huber, Thomas Nokia

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

The editing instruction notes that the text of row 2 is to be changed relative to the base standard, as modified by 802.3cy, 802.3da, and 802.3dg. In 802.3dg, the reserved bits are 15:10 rather than 15:7. While the final text is correct, it may be confusing to readers to see bit 7 replcaed with bit 12 in the second row, but only bits 10 and 11 being added in the new rows.

SuggestedRemedy

Change the Bit(s) column in the second row to show a 10 in strikethrough rather than a 7, or include the rows defining bits 7-9 in the table as unchanged rows (in which case the rows being added for bits 10 and 11 should be underlined)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change the reserved row to 1.18:15:_12_ -9-

Where _12_ means "12" underlined.
Where -9- means "9" in strikethrough.

Cl **45** *SC* **45.2.1.16** *P* **36** *L* **27** # 141

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

update Editor's instructions

SuggestedRemedy

Change: 45.2.1.16.aaaa
To: 45.2.1.16.aaaa and 45.2.1.16.aaab

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.16** *P* **36** *L* **44** # 142

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

update Editor's instructions

SuggestedRemedy

Change: 45.2.1.60f
To: 45.2.1.60f and subclauses and table 45-58f.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.60f** *P* **36** *L* **44** # 97

Huber, Thomas Nokia

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

In the editing instruction, subclause 45.2.1.60e was added by 802.3dj rather than 802.3df.

SuggestedRemedy

Change 802.3df to 802.3dj

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.214** *P* **40** *L* **5** # 297

Simms, William NVIDIA

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

The instruction is to replace rows for bits 1.2100.13:4 and 1.2100.3:0 but the table is 1.2100.13:5 and 1.2100.4:0

SuggestedRemedy

Need to correct either the instruction or the table to reconcile the change

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: Replace the rows for bits 1.2100.13:4 and 1.2100.3:0 in Table 45–178

Change: In Table 45–178, replace the rows for bits 1.2100.13:4 and 1.2100.3:0, with the rows for bits 1.2100.13:5 and 1.2100.4:0.

Cl **45** *SC* **45.2.1.214** *P* **40** *L* **19** # 298

Simms, William NVIDIA

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

visually, it looks like there is a space between the T and the 1 in MultiGBASE-AT1. I don't see a space when I select the text but visually it seems to be there.

SuggestedRemedy

check if there is a spece present between the T and the 1

Proposed Response *Response Status* **W**

PROPOSED REJECT.

There is not a space. It's related to the spacing of the different characters.

Cl **45** *SC* **45.2.1.244.1** *P* **40** *L* **51** # 184

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

missing register that needs to be updated for 191

SuggestedRemedy

Bring in this section from 802.3, as modified by 802.3cy and add references to 191.3.2.2.14, 191.5.2.4.5 and 191.5.2.5.4, with editorial license.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.245.1** *P* **40** *L* **51** # 185

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

missing register that needs to be updated for 191

SuggestedRemedy

Bring in this section from 802.3, as modified by 802.3cy and add references to 191.3.2.2.14, 191.5.2.4.5 and 191.5.2.5.4 , with editorial license.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.246** *P* **40** *L* **51** # 186

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

missing register that needs to be updated for 191

SuggestedRemedy

Bring in this section from 802.3, as modified by 802.3cy and add appropriate references, with editorial license.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.250** *P* **40** *L* **13** # 485

Dawe, Piers Nvidia

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

In most of 802.3, except for old 8B/10B style sections, we use Rx for receiver and Tx for transmitter. TX, as well as being part of 100BASE-TX, means Texas.

SuggestedRemedy

Change RX to Rx and TX to Tx throughut the document except in names where ALL CAPs are used, such as RX_CLK.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.250** *P* **44** *L* **43** # 261

Steve, Gorshe Microchip Technology

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

Typo error in the text associated with each of the 45.2.1.250c sub-clauses on pages 44-45.

SuggestedRemedy

In the text for each 45.2.1.1.250c.x sub-clause, change the register bit reference to be the same as in the sub-clause title rather than a reference back to Table 45-212a.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** SC **45.2.1.250** P **45** L **7** # 242

Steve, Gorshe — Microchip Technology

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

Sub-clause 45.2.1.250c.4 title and text point to an incorrect register value

SuggestedRemedy

Change 1.2318.8 to 1.2320.8

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** SC **45.2.1.250a** P **41** L **6** # 98

Huber, Thomas — Nokia

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

802.3dj is already inserting table 45-212a in subclause 45.2.1.250

SuggestedRemedy

Change Table 45-212a to Table 45-212aa. Make the same change in the title of the table.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by #99.

The table should be 45-212ab

Cl **45** SC **45.2.1.250a** P **41** L **35** # 299

Simms, William — NVIDIA

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

missing space in description column between 5 and Gb/s. Inconsistent with rest of table

SuggestedRemedy

add space between 5 Gb/s

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** SC **45.2.1.250a** P **41** L **37** # 300

Simms, William — NVIDIA

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

missing space in description column between 2.5 and Gb/s. Inconsistent with rest of table

SuggestedRemedy

add space between 2.5 Gb/s

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** SC **45.2.1.250b** P **42** L **43** # 301

Simms, William — NVIDIA

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

There's a mismatch somewhere here. The Table 45-212a is rate ability register definitions and 45-212b is rate negotiation definitions. I suspect either the title is wrong or the pointer is to the wrong table

SuggestedRemedy

refer to table 45-212b instead?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by #99.

The table should be 45-212ab

Cl **45** SC **45.2.1.250b** P **42** L **45** # 99

Huber, Thomas — Nokia

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

The table for the PMA assignments should be 45-212ab rather than 45-212a

SuggestedRemedy

Change Table 45-212a to Table 45-212ab. Change the title of the table itself (on the following page) from 45-212b to 45-212ab.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.250b.1** *P* **42** *L* **50** # 389

Maguire, Valerie Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

Missing commas.

SuggestedRemedy

Change, "When bits 1.2319:5:4 are 00 negotiation of the PHY_D transmit rate is in progress."

to: "When bits 1.2319:5:4 are 00, negotiation of the PHY_D transmit rate is in progress."

Grant Editorial license to review and correct this is all clause 45 bit clauses.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.250b.2** *P* **43** *L* **25** # 302

Simms, William NVIDIA

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

incorrect bits and bit amount called out "When bits 1.2319:5:4" 000 when only 2-bits called out. Likely a typo carried forward from prior register text

SuggestedRemedy

should be "When bits 1.2319:3:1"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: 1.2319.5:4
To: 12319.3:1

Cl **45** *SC* **45.2.1.250b.2** *P* **43** *L* **43** # 390

Maguire, Valerie Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

Numbers less than ten should be spelled out. Insert comma per another Maguire comment.

SuggestedRemedy

Change, "When bit 1.2319.0 is 1 the LEADER..."

to: "When bit 1.2319.0 is one, the LEADER...."

Change, "When bit 1.2319.0 is 0 the LEADER..."

to: "When bit 1.2319.zero, the LEADER...."

Grant Editorial license to review and correct this is all clause 45 bit clauses.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.250b.3** *P* **43** *L* **34** # 303

Simms, William NVIDIA

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

no period at end of sentence

SuggestedRemedy

PHY_S mode.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.250c** *P* **43** *L* **39** # 100

Huber, Thomas Nokia

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

The table should be 45-212ac

SuggestedRemedy

Change Table 45-212c to Table 45-212ac. Make the same change in the title of the table.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** SC **45.2.1.250c.0** P **45** L **33** # 312

Simms, William NVIDIA

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

mismatch in title bit called out versus text

SuggestedRemedy

change bit 1.2318.0 to 1.2320.0, two instances

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** SC **45.2.1.250c.1** P **44** L **40** # 306

Simms, William NVIDIA

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

mismatch in title bit called out versus text

SuggestedRemedy

change bit 1.2318.15 to 1.2320.15, two instances

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** SC **45.2.1.250c.1** P **44** L **42** # 101

Huber, Thomas Nokia

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

In this clause and all the other 45.2.1.250c.* clauses, the bit numbers should be 1.2320.x rather than 1.2318.x.

SuggestedRemedy

Change 1.2318 to 1.2320 in all 45.2.1.250c.x subclauses

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** SC **45.2.1.250c.2** P **44** L **48** # 307

Simms, William NVIDIA

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

mismatch in title bit called out versus text

SuggestedRemedy

change bit 1.2318.13 to 1.2320.13, two instances

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** SC **45.2.1.250c.3** P **45** L **3** # 308

Simms, William NVIDIA

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

mismatch in title bit called out versus text

SuggestedRemedy

change bit 1.2318.12 to 1.2320.12, two instances

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** SC **45.2.1.250c.4** P **45** L **7** # 313

Simms, William NVIDIA

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

wrong bits in title and body altogether

SuggestedRemedy

change bit 1.2318.8 to 1.2320.8, three instances

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** SC **45.2.1.250c.5** P **45** L **15** # 309

Simms, William NVIDIA

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

mismatch in title bit called out versus text

SuggestedRemedy

change bit 1.2318.7 to 1.2320.7, two instances

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** SC **45.2.1.250c.6** P **45** L **21** # 310

Simms, William NVIDIA

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

mismatch in title bit called out versus text

SuggestedRemedy

change bit 1.2318.5 to 1.2320.5, two instances

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.250c.7** *P* **45** *L* **27** # 311

Simms, William NVIDIA

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

mismatch in title bit called out versus text

SuggestedRemedy

change bit 1.2318.4 to 1.2320.4, two instances

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3** *P* **45** *L* **38** # 188

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

Add note to registers to indicate they are also used for -V1 type PHYs.

SuggestedRemedy

Bring in Table 45-233.
Add the following, existing, registers in Table 45-233 (3.2318 through 3.2319, 3.2320 through 3.2321, 3.2322, 3.2323, 3.2324). Add a "a" superscript to the name.
Add note "a" at the end of the table: This register also applies to all MutltiG type -V1 PHYs.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.87.6** *P* **46** *L* **18** # 314

Simms, William NVIDIA

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

Hyphenation: “six bit counter” → IEEE style usually prefers “six-bit counter”

SuggestedRemedy

make six-bit counter

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **table 45-212c** *P* **44** *L* **24** # 304

Simms, William NVIDIA

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

missing space in description column between 5 and Gb/s. Inconsistent with rest of table

SuggestedRemedy

add space between 5 Gb/s

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **table 45-212c** *P* **44** *L* **28** # 305

Simms, William NVIDIA

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

missing space in description column between 2.5 and Gb/s. Inconsistent with rest of table

SuggestedRemedy

add space between 2.5 Gb/s

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **Table 45-58f** *P* **37** *L* **9** # 296

Simms, William NVIDIA

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

Table 45–58f lists both MultiGBASE-AV1 and MultiGBASE-AT1 under bit 1.77.13, but the prose on pages 36–38 correctly puts AV1 at 1.77.13 and AT1 at 1.77.12.

SuggestedRemedy

change line 9 table entry for AT1 to Bit 1.77.12 and then maybe flip the order of the bits 13 and 12.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

P37L9, Change "13" to "12".

Cl **46** SC **46.3.2.1** P **48** L **16** # 315

Simms, William NVIDIA

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

Reference to 46.3.1.1 should be 46.3.2.1

SuggestedRemedy

change to 46.3.2.1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** SC **98.2.1.1.4** P **52** L **47** # 316

Simms, William NVIDIA

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

missing Ohm symbol

SuggestedRemedy

replace 100 / with 100 Ohm

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** SC **98.2.1.1.4** P **52** L **48** # 317

Simms, William NVIDIA

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

typo 'within range'

SuggestedRemedy

replace 'within range' with 'within the range'

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98** SC **98.2.1.2.4** P **53** L **8** # 318

Simms, William NVIDIA

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

Body is clearly Technology Ability Field (A[26:0])… — belongs in 98.2.1.2.4, not 98.2.1.1.4 (transmitter peak output).

SuggestedRemedy

change to 98.2.1.2.4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98B** SC **98B** P **250** L **0** # 324

Simms, William NVIDIA

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

The header is different than rest of document

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98B** SC **98B** P **251** L **0** # 325

Simms, William NVIDIA

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

The header is different than rest of document

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98B** SC **98B.3** P **250** L **14** # 18

Ran, Adee Cisco Systems

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

There is an editorial instruction to change rows in the table, and then to replace the table.

SuggestedRemedy

Delete the instruction "Replace Table 98B-1 as follows".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98B** SC **98B.3** P **250** L **17** # 110

Huber, Thomas Nokia

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

The table being modified is Table 98B-1 rather than 1b

SuggestedRemedy

in the title of the table, change Table 98B-1b to Table 98B-1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98B** *SC* **98B.4** *P* **250** *L* **43** # 19

Ran, Adee Cisco Systems

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

"Table 98B–2 shall indicate the relative priorities" - The table is a definition, not a normative requirement. The requirement it is to implement the resolution according to the table. But this is already stated in 98.2.4.2 and should not be repeated here.

SuggestedRemedy

Change to "Table 98B–2 indicates the relative priorities".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **98B** *SC* **98B.4** *P* **251** *L* **41** # 218

Slavick, Jeff Broadcom

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

The NOTE indicates that "F" and "L" are be intrepretted as Follower and Leader but the table uses them as "(F)" and "(L)". There are other L present in the definitions like T1L.

SuggestedRemedy

Change "L" to "(L)" and "F" to "(F)" in the NOTE.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.1** *P* **56** *L* **31** # 3

Ran, Adee Cisco Systems

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

"The conductors supporting the operation of the 100M+2.5GBASE-T1, <…> are defined <…> allowing implementers to provide their own conductors <…> as long as the normative requirements included in 191.9 are met"

191.9 discusses link segments that are not just conductors but specifically "shielded balanced pair of conductors". The term "link segment" is also used in 191.1.

Simlarly in the next paragraph which discusses -V1 PHYs.

Also possibly in clause 192.

SuggestedRemedy

In the quoted senteence, change "conductors" to "link segments".

Make the same change in the paragraph about -V1.

Implement in clause 192 if appropriate.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

This comment does not apply to Clause 192.

Cl **191** *SC* **191.1** *P* **56** *L* **34** # 282

Jones, Peter Cisco Systems

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

The text “implementers to provide their own conductors” sounds wrong. Implementers always provide conductors; the standard does not.

SuggestedRemedy

Change “implementers to provide their own conductors” to “implementers to specify their own conductors”.
Make the same change on page/line: 56/44.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by #3.

Cl **191** *SC* **191.1.1** *P* **57** *L* **43** # 104

Huber, Thomas Nokia

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

The wording for the aggregate terminology below the figure is a bit awkward: "For all PHYs communicating on a shielded, balanced, pair of conductors, regardless of transmit bit rate, use:", etc.

SuggestedRemedy

Delete the definitions below the figure. Add these to the list of nomenclature that is above the figure:
MultiG+100M/100M+MultiGBASE-T1 Refers to all PHYs communicating on a shielded, balanced, pair of conductors, regardless of bit rate
MultiG+100M/100M+MultiGBASE-V1 Refers to all PHYs communicating on a coaxial cable, regardless of bit rate
MultiG+100M/100M+MultiGBASE-T1/V1 Refers to all PHYs regardless of cable type or bit rate

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See #281 which rewrites this text.

Cl **191** *SC* **191.1.1** *P* **58** *L* **1** # 105

Huber, Thomas Nokia

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

"PHY's transmit bit rate" is unnecessarily personifying the PHY

SuggestedRemedy

Change to "transmit bit rate of the PHY"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.1.2** *P* **59** *L* **15** # 78

Ran, Adee Cisco Systems

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

The right side of Figure 191-2 shows the -V1 stack with an AN block, referred to as optional, and the text above the figure points to clause 98 for the whole family (including -V1). Also in 191.1.3 AN is mentioned for both T1 and V1, and there are numerous other mentions of AN in the clause.

However, in 191.8.1 it is stated that -V1 PHYs do not support AN.

SuggestedRemedy

Delete the AN block from the right-hand stack and delete the -V1 family from references to AN.
Conside how to clarify that AN is not supported (even as an option) in -V1, in the other mentions of AN.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See #158 which deletes the text in question.

Cl **191** *SC* **191.1.3** *P* **59** *L* **33** # 145

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

improve wording

SuggestedRemedy

Change: receives at a 100 Mb/s bit rate
To: receives at a bit rate of 100 Mb/s
Also P59L35.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.1.3.2** *P* **63** *L* **28** # 501

Razavi, Alireza Eliyan

Comment Type **E** *Comment Status* **D** *late - EZ*

While PHY_D and PHY_S defined, 100M+MultiGBASE-T1/V1 , and MultiGBASE+100M-T1/V1 are widely used

SuggestedRemedy

use PHY_D for 100M+MultiGBASE-T1/V1,and PHY_S as MultiGBASE+100M-T1/V1 in the text

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: 100M+MultiGBASE-T1/V1
To: PHY_D

AND

Change: MultiGBASE+100M-T1/V1
To: PHY_S

Throughout Clause 191.

Cl **191** *SC* **191.1.4** *P* **64** *L* **26** # 517

Razavi, Alireza Eliyan

Comment Type **E** *Comment Status* **D** *late - EZ*

Passive voice: “HS_PATH signaling is performed by the HS_TX PCS generating continuous code-group sequences …”

SuggestedRemedy

replace with "HS_TX PCS generates countinous..", same for p64,l52, p76,l27,

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.2.1** *P* **146** *L* **43** # 160

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

The frequency range for PSANEXT should be modified to match the rest of this subclause.

SuggestedRemedy

At the end of the sentence add the following:
where f is the frquency in MHz; 3 <=f <= 4000

Proposed Response *Response Status* **Z**

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

Cl **191** *SC* **191.2.2** *P* **146** *L* **47** # 161

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

The frequency range for PSAACRF should be modified to match the rest of this subclause.

SuggestedRemedy

At the end of the sentence add the following:
where f is the frquency in MHz; 3 <=f <= 4000

Proposed Response *Response Status* **Z**

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

Cl **191** *SC* **191.2.2.1.1** *P* **70** *L* **8** # 380

Maguire, Valerie — Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

It's unclear what " in case" means here… Do we mean "if transmission of…"? Or, "when transmission of…"?

SuggestedRemedy

Replace "...in case transmission of…" with "…when transmission of…" in the following six locations:
P70, L8
P70, L10
P119, L15
P125, L11
P167, L11
P167, L14

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.2.2.2** *P* **70** *L* **25** # 79

Ran, Adee — Cisco Systems

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

"Clause 98" is formatted as external reference but exists in the draft.

SuggestedRemedy

Make it an active xref.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.2.2.4.2** *P* **72** *L* **5** # 320

Simms, William — NVIDIA

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

should we be using MHz or MBd?

SuggestedRemedy

change to MBd if desired

Proposed Response *Response Status* **W**

PROPOSED REJECT.

MHz is correct.

This is MHz in Clause 149 and GHz in Clause 165.

Cl **191** *SC* **191.2.2.5.3** *P* **72** *L* **37** # 319

Simms, William — NVIDIA

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

should LS_RX point to 191.5.2.5?

SuggestedRemedy

change LS_RX point to 191.5.2.3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.2.2.9.1** *P* **74** *L* **4** # 321

Simms, William — NVIDIA

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

Other sections titled 'Semantics of the primitive' go on to name features or further define things. This one seems to be missing. Is it intentional?

SuggestedRemedy

add definitions of primirive if desired

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by #455.

Cl **191** *SC* **191.2.2.9.1** *P* **74** *L* **4** # 455

Law, David — HPE

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

The semantics of the PMA_PCSDATAMODE.indication primitive are missing a definition of the pcs_data_mode parameter.

SuggestedRemedy

Add the text:

The pcs_data_mode parameter can take on one of two values of the form:
TRUE The PCS is transmitting and receiving data from the XGMII.
FALSE The PCS is in a training or test mode.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2** *P* **74** *L* **26** # 146

Wienckowski, Natalie — IVN Solutions LLC; Ethernovia & Bosch

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

improve wording and add OAM

SuggestedRemedy

Change: The PCS comprises one PCS Reset function and two simultaneous and asynchronous operating functions, one of which is the HS_PATH and the other is the LS_PATH. This subclause discusses the HS_PATH. The
HS_PATH PCS operating functions are the HS_TX PCS Transmit in the PHY_S device, and the HS_RX PCS Receive in the PHY_D device.
To: The HS_PATH PCS comprises the following functions: PCS Reset, HS_TX PCS Transmit in the PHY_S device, HS_RX PCS Receive in the PHY_D device, and an optional PCS OAM. The PCS Transmit and PCS Receive functions execute simultaneously and asynchronously.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.1** *P* **76** *L* **5** # 422

Zimmerman, George — CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

There is only one PCS reset - there isn't a 'low speed reset' and a 'high speed reset'. The text should reflect this.

SuggestedRemedy

Insert the following after "PCS Reset initializes all PCS functions." (P76 L4) "This means that there is only one PCS Reset, resetting both the low speed and high speed paths."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.2** *P* **76** *L* **34** # 6

Ran, Adee — Cisco Systems

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

"L-interleaved RS-FEC which adds L × 340 parity bits."
L is used here before it is defined (although it can be inferred). The reader has to read into the next page to find the definition "L is called the interleaving depth, and the possible choices of L are 1, 2, and 4" (P77 L19). And prior to that there is another usage of this parameter "L-interleaved (L = 1, 2, or 4)" (P77 L8).

Also possibly in clause 192.

SuggestedRemedy

Edit to define the parameter L first and then use it.

Implement in clause 192 if appropriate.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

P77L19
Delete: L is called the interleaving depth, and the possible choices of L are 1, 2, and 4.

P76L33
Change: the PCS Transmit process take L groups of 50 65B blocks and append a 10-bit OAM field to each group.

To: the PCS Transmit process takes L groups of 50 65B blocks, where L is the interleaving depth, and the possible choices of L are 1, 2, and 4. A 10-bit OAM field is appended to each group.

Cl **191** *SC* **191.3.2.2** *P* **76** *L* **35** # 42

Muma, Scott — Microchip

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

L35-37 and L39-41 are saying nearly the same thing in 2 slightly different ways. Combine to remove repetition.

SuggestedRemedy

Combine L35-41 as: These bits are then mapped, two at a time, into a PAM4 symbol for 10G and one at a time into a PAM2 symbol for 2.5G and 5G. In each symbol period transmit data-units are sent to the PMA service interface via the PMA_UNITDATA.request primitive. The symbol period, T, is 1000 / (5.625 × S) ps. See Table 201–1 for the definition of S.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.2** *P* **76** *L* **40** # 509

Razavi, Alireza Eliyan

Comment Type **ER** *Comment Status* **D** *late - EZ*

Several sentences in Clause 191 use passive voice where an active construction would read more directly and better matches preferred 802.3 drafting style. Example — 191.3.2.2 (p76) states: “The operation of the PCS Transmit function is controlled by the PMA_TXMODE.indication message received from the PMA PHY Control function.” The acting entity (the PMA_TXMODE.indication message) appears after the verb. Suggested active form and additional instances are given in the Proposed Change column.

SuggestedRemedy

Convert the example to active voice: “The PMA_TXMODE.indication message, received from the PMA PHY Control function, controls the operation of the PCS Transmit function.” Apply the same passive-to-active conversion to the following instances: (a) p63 191.1.3 — “Each of these 276-bit blocks is formed into an RS-FEC input frame, then encoded by the RS-FEC(50,46,6)” → “The PCS forms each 276-bit block into an RS-FEC input frame, then the RS-FEC(50,46,6) encoder encodes it.” (b) p64 191.1.4 — “the PCS is directed to generate only PAM2 symbols for transmission by the HS_TX PMA” → “PHY Control directs the PCS to generate only PAM2 symbols for the HS_TX PMA to transmit.” (c) p73 191.2.3 — “The pcs_data_mode variable is generated by the PMA PHY Control function” → “The PMA PHY Control function generates the pcs_data_mode variable.” (d) p85 191.3.2.3 — “Frames that cannot be corrected are marked with error symbols by the decoder” → “The decoder marks frames that cannot be corrected with error symbols.” (e) p96 191.3.6 — “This status is set by the PHY to indicate the status of the receiver” → “The PHY sets this status to indicate the status of the receiver.” These are editorial improvements only; no normative change is intended. Passive voice remains acceptable where the acting entity is genuinely unimportant or unknown.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.2** *P* **77** *L* **7** # 504

Razavi, Alireza Eliyan

Comment Type **ER** *Comment Status* **D** *late -EZ*

Long sentence (43 words) reduces readability. Current text: “If a PMA_TXMODE.indication message has the value SEND_N, the PCS is in the data mode of operation and the PCS Transmit function shall use a 65B coding technique to generate, at each symbol period, code-groups that represent data or control.”

SuggestedRemedy

Replace with two sentences: “If a PMA_TXMODE.indication message has the value SEND_N, the PCS is in the data mode of operation. In data mode, the PCS Transmit function shall use a 65B coding technique to generate, at each symbol period, code-groups that represent data or control.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.2** *P* **77** *L* **15** # 505

Razavi, Alireza Eliyan

Comment Type **ER** *Comment Status* **D** *late - EZ*

Long sentence (38 words) reduces readability. Current text: “During data encoding, PCS Transmit utilizes L-interleaved (L = 1, 2, or 4) Reed-Solomon encoders to generate and append 340 parity check bits to form 3600-bit (360,326) RS-FEC frames that are interleaved into an L-interleaved RS-FEC superframe.”

SuggestedRemedy

Replace with two sentences: “During data encoding, PCS Transmit uses L-interleaved (L = 1, 2, or 4) Reed-Solomon encoders to generate and append 340 parity check bits, forming 3600-bit (360,326) RS-FEC frames. These frames are interleaved into an L-interleaved RS-FEC superframe.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.2** *P* **77** *L* **17** # 289

van Dyck, Peter Infineon

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

Missing distinction between 2.5/5G and 10G regarding PAM2/PAM4 usage during data mode.

SuggestedRemedy

Replace:
The bits of the RS-FEC superframe are then scrambled by the PCS using an additive PCS scrambler, encoded in PAM4 symbols, and transferred to the PMA.
With:
The bits of the RS-FEC superframe are then scrambled by the PCS using an additive PCS scrambler, encoded in PAM4 symbols in 10G and PAM2 symbols in 2.5G/5G, and transferred to the PMA.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by #42.

Cl **191** *SC* **191.3.2.2** *P* **77** *L* **19** # 7

Ran, Adee Cisco Systems

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

"The interleaver settings requested in each direction of transmission may be different"

But this subclause describes the HS_PATH which has only one direction. The LS_PATH seems to have no interleaving.

Also possibly in clause 192.

SuggestedRemedy

Clarify or delete this sentence.

Implement in clause 192 if appropriate.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Delete: The interleaver settings requested in each direction of transmission may be different

This comment does not apply to Clause 192.

Cl **191** *SC* **191.3.2.2** *P* **77** *L* **22** # 506

Razavi, Alireza Eliyan

Comment Type **ER** *Comment Status* **D** *late - EZ*

Long sentence (36 words) reduces readability. Current text: “The interleaver settings requested in each direction of transmission may be different, and the value of L used by the transmitter is determined by the link partner and signaled during the PAM2 training mode Infofield exchange.”

SuggestedRemedy

Replace with two sentences: “The interleaver settings requested in each direction of transmission may be different. The link partner determines the value of L used by the transmitter, and signals it during the PAM2 training mode Infofield exchange.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.2** *P* **77** *L* **30** # 493

Cheng, Xiaoyue Infineon

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

HS_PATH 10G encoding is expected to be consistent with MGBT1, but Figure 191-9 shows DSn[0] XOR with Dn[1] and DSn[1] XOR with Dn[0]

SuggestedRemedy

swap Dn[1] and Dn[0] so that DSn[0] XOR with Dn[0], and DSn[1] XOR with Dn[1]

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.2** *P* **77** *L* **30** # 124

de Koos, Andras Microchip Technology

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

In figure Figure 191–9, the bits Dn[0] and Dn[1] are reversed. Dn[0] should be XORed with DSn[0] and Dn[1] should be XORed with DSn[1], at least according to Clause 149.

SuggestedRemedy

Please correct figure 191–9.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.2** *P* **77** *L* **31** # 405

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

Figure 191-9 incorrectly has Dn[1] xored with DSn[0] and Dn[0] xored with DSn[1]. According to 149.3.2.2.18, which is referenced in by 191.3.2.2.17, it should be the other way around (0 with 0 and 1 with 1). (note that DSn[0] and DSn[1] appear to be formed correctly)

SuggestedRemedy

In Figure 191-9, change Dn[0] to Dn[1] and Dn[1] to Dn[0]

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.2** *P* **77** *L* **32** # 43

Muma, Scott — Microchip

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

Dn[0] and Dn[1] are reversed from the explanation in 149.3.2.2.18

SuggestedRemedy

In Figure 201-9 swap Dn[0] and Dn[1].

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.2** *P* **79** *L* **31** # 285

van Dyck, Peter — Infineon

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

Figure 191-11: For 10G, a RS-FEC superframe always has L x 1800 PAM4 symbols. A Training frame always has 7200 PAM2 symbols. The training frame symbols match the data path symbols for a case with L=4

SuggestedRemedy

Replace:
RS-FEC superframe (L × 1800 × u symbols)
With:
RS-FEC superframe (L × 1800 symbols) / Training Frame (u x 1800 symbols)

Replace:
For PAM2 path, V=2 and u=2
With:
For PAM2 path, V=2 and u=4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.2** *P* **80** *L* **29** # 286

van Dyck, Peter — Infineon

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

Figure 191-12: For 2.5G and 5G, a RS-FEC superframe always has L x 3600 PAM2 symbols. A Training frame always has 7200 PAM2 symbols. The training frame symbols match the data path symbols for a case with L=2

SuggestedRemedy

Replace:
RS-FEC superframe (L × 1800 × u symbols)
With:
RS-FEC superframe (L × 3600 symbols) / Training Frame (7200 symbols)

Replace:
For PAM2 path, V=2 and u=2
With:
For RS-FEC Frame u=1. For Training Frame u=2.

Replace:
PAMVu x 1800-1
With:
PAM2u x 3600-1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.2** *P* **81** *L* **43** # 287

van Dyck, Peter — Infineon

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

Figure 191-13: Same as comment for Figure 191-11

SuggestedRemedy

Replace:
For PAM2 path, V=2 and u=2
With:
For PAM2 path, V=2 and u=4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.2** *P* **82** *L* **43** # 288

van Dyck, Peter Infineon

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

Figure 191-14: Same as comment for Figure 191-12

SuggestedRemedy

Replace:
For PAM2 path, V=2 and u=2. For PAM4 path, V=4 and u=1.
With:
For RS-FEC Frame u=1. For Training Frame u=2.

Replace:
rx_PAMVn+(u x 1800-1)
With:
rx_PAM2n+(u x 3600-1)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.2.1** *P* **78** *L* **22** # 424

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

Use of blocks, notation, structure, control codes and encodings of control characters is identical for low speed and high speed.

SuggestedRemedy

Insert "The use of blocks, notation, block structure, control codes, and encoding of ordered sets, idle, start, terminate, and error characters is identical for the high speed path as for the low speed path." at P78 L29 as a new last paragraph to 191.3.2.2.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.2.3** *P* **78** *L* **43** # 363

Lasry, Ariel Qualcomm Technologies, Inc.

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

It refers to 149.3.2.2.3. But 149.3.2.2.3 includes Figure 149-7 "PCS Receive bit Ordering" which is not applicable to Clause 191

SuggestedRemedy

Copy the text from 149.3.2.2.3 to this Sub-clause and replace Figure 149-7 with Figures 191-13 and 191-14

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.2.4** *P* **78** *L* **47** # 364

Lasry, Ariel Qualcomm Technologies, Inc.

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

The referenced 149.3.2.2.4 includes the following text "The format of the blocks for MultiGBASE-T1 is as shown in Figure 149–8". However MultiGBASE-T1 is not defined for Clause 191 and it should also apply to V1

SuggestedRemedy

Add "With MultiGBASE-T1 replaced with MultiG+100M/100M+MultiGBASE-T1/V1."
Alternatively update Clause 149.3.2.2.4 to include "MultiG+100M/100M+MultiGBASE-T1/V1".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add "With MultiGBASE-T1 replaced with MultiG+100M/100M+MultiGBASE-T1/V1."

Cl **191** *SC* **191.3.2.2.5** *P* **78** *L* **50** # 410

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

149.3.2.2.5 has requirements in it - these need to be called out with a shall.

SuggestedRemedy

Either bring in the text of 149.3.2.2.5 or, change "See 149.3.2.2.5" to "Control codes shall be encoded as specified in 149.3.2.2.5." add PICS to PCT section, copying PICS PCT8 in Clause 149.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: See 149.3.2.2.5.

To: Control codes shall be encoded as specified in 149.3.2.2.5.
Add PICS to PCT section, copying PICS PCT8 in Clause 149.

Cl **191** *SC* **191.3.2.2.5** *P* **78** *L* **51** # 365

Lasry, Ariel — Qualcomm Technologies, Inc.

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

The referenced 149.3.2.2.5 includes the following text "2.5G/5G/10GBASE-T1" which is not relevant for clause 191

SuggestedRemedy

Add "With 2.5G/5G/10GBASE-T1 replaced with MultiG+100M/100M+MultiGBASE-T1/V1." Alternatively update Clause 149.3.2.2.5 to include "MultiG+100M/100M+MultiGBASE-T1/V1".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by #410.

Cl **191** *SC* **191.3.2.2.6** *P* **79** *L* **42** # 503

Razavi, Alireza — Eliyan

Comment Type **E** *Comment Status* **D** *late - EZ*

191.3.2.2.6 “Ordered sets” is a modified-adoption reference: “See 149.3.2.2.6. LPI, /LI/ is not used by MultiG+100MBASE-T1/V1 PHYs.” The reader must open Clause 149.3.2.2.6, then mentally subtract the LPI/ /LI/ content, to know the actual requirement.

SuggestedRemedy

Rewrite so the net requirement is stated locally, e.g., “Ordered sets are as specified in 149.3.2.2.6, except that LPI signaling and the /LI/ ordered set are not used by MultiG+100MBASE-T1/V1 PHYs. All other ordered sets defined in 149.3.2.2.6 apply unchanged.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.2.6** *P* **79** *L* **43** # 518

Razavi, Alireza — Eliyan

Comment Type **E** *Comment Status* **D** *late - EZ*

Typo: “MutltiG+100MBASE-T1/V1” has a misspelling (“Mutlti”).

SuggestedRemedy

Correct to “MultiG+100MBASE-T1/V1”.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

If comment #501 is accepted

Change: MutltiG+100MBASE-T1/V1

To: PHY_S

If comment #501 is rejected, do the suggested remedy.

Cl **191** *SC* **191.3.2.2.7** *P* **79** *L* **47** # 411

Zimmerman, George — CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

149.3.2.2.7 has requirements in it - these need to be called out with a shall.

SuggestedRemedy

Either bring in the text of 149.3.2.2.7 or, change "See 149.3.2.2.7" to "Idles shall be encoded as specified in 149.3.2.2.7." add PICS to PCT section, copying PICS PCT9, 10 & 11 in Clause 149.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: See 149.3.2.2.7.
To: Idles shall be encoded as specified in 149.3.2.2.7.
Add PICS to PCT section, copying PICS PCT9, 10 & 11 in Clause 149.

Cl **191** *SC* **191.3.2.2.8** *P* **80** *L* **35** # 45

Muma, Scott — Microchip

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

There is no PAM4 path shown in this figure.

SuggestedRemedy

Replace V with 2, and u with 2 and simplify math in Figure 201-14, remove Note 3.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by #286.

Cl **191** *SC* **191.3.2.2.11** *P* **80** *L* **46** # 412

Zimmerman, George — CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

149.3.2.2.11 has requirements in it - these need to be called out with a shall.

SuggestedRemedy

Either bring in the text of 149.3.2.2.11 or, change "See 149.3.2.2.11" to "Idles shall be encoded as specified in 149.3.2.2.11." add PICS to PCT section, copying PICS PCT14 in Clause 149

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: See 149.3.2.2.11.
To: Idles shall be encoded as specified in 149.3.2.2.11.
Add PICS to PCT section, copying PICS PCT14 in Clause 149

Cl **191** *SC* **191.3.2.2.11** *P* **80** *L* **51** # 366

Lasry, Ariel — Qualcomm Technologies, Inc.

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

The referenced Sub-clause 149.3.2.2.12 is referring to definitions of R_BLOCK_TYPE and T_BLOCK_TYPE in 149.3.7.2.4. It is better to use the definition in 191.3.5.1.4

SuggestedRemedy

Copy the text from 149.3.2.12 to line 51 and replace 149.3.7.2.4 with 191.3.5.1.4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace text in 191.3.2.2.11 with:
The /E/ is sent whenever an /E/ is received. The /E/ allows physical sublayers such as the PCS to propagate received errors. See R_BLOCK_TYPE and T_BLOCK_TYPE function definitions in 191.3.5.1.4 for further
information.

Cl **191** *SC* **191.3.2.2.12** *P* **82** *L* **43** # 44

Muma, Scott — Microchip

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

There is no PAM4 path shown in this figure.

SuggestedRemedy

Replace V with 2, and u with 2 and simplify math in Figure 201-14, remove Note 3.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by #288.

Cl **191** *SC* **191.3.2.2.14** *P* **83** *L* **24** # 413

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

149.3.2.2.15 has requirements in it - these need to be called out with a shall.

SuggestedRemedy

Either bring in the text of 149.3.2.2.15 or, change "See 149.3.2.2.15" to "RS-FEC superframes shall be interleaved as specified in 149.3.2.2.15." add PICS to PCT section, copying PICS PCT16, 17, and 18 in Clause 149

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: See 149.3.2.2.15.

To: RS-FEC superframes shall be interleaved as specified in 149.3.2.2.15.

Add PICS to PCT section, copying PICS PCT16, 17, and 18 in Clause 149

Cl **191** *SC* **191.3.2.2.17** *P* **83** *L* **35** # 406

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

The text of 149.3.2.2.18 references the scrambler in clause 149 which is different from clause 191, creating an error. Either the text needs to be brought in, with the reference to 149.3.4 changed to 191.3.2.2.19, or the text needs to note the change of scrambler.

SuggestedRemedy

Either: bring in the text of 149.3.2.2.18, changing the reference to 149.3.4 to 191.3.2.2.19
OR
Change the text of 191.3.2.2.17 to "As specified in 149.3.2.2.18, with the exception that the scrambler defined in 191.3.2.2.19 is used in place of the scrambler in 149.3.4".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change the text of 191.3.2.2.17 to "As specified in 149.3.2.2.18, with the exception that the scrambler defined in 191.3.2.2.19 is used in place of the scrambler in 149.3.4".

Cl **191** *SC* **191.3.2.2.18** *P* **83** *L* **44** # 290

van Dyck, Peter Infineon

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

Figure 191-10 shows Dn not Dn[0].

SuggestedRemedy

Replace:
All incoming PAM2 path HS_RX (5 Gb/s and 2.5 Gb/s) data bits are Dn, which are represented in
Figure 191–10 as Dn[0].
With:
All incoming PAM2 path HS_RX (5 Gb/s and 2.5 Gb/s) data bits are Dn, as shown in Figure 191-10.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Should be HS_TX, not HS_RX.
Replace:
All incoming PAM2 path HS_RX (5 Gb/s and 2.5 Gb/s) data bits are Dn, which are represented in Figure 191–10 as Dn[0].
With:
All incoming PAM2 path HS_TX (5 Gb/s and 2.5 Gb/s) data bits are Dn, as shown in Figure 191-10.

Cl **191** *SC* **191.3.2.2.18** *P* **83** *L* **44** # 322

Simms, William NVIDIA

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

All incoming PAM2 path HS_RX'. Is this a typo? I thought we are in the HS_TX section

SuggestedRemedy

fix if typo confirmed

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: HS_RX
To: HS_TX

Cl **191** *SC* **191.3.2.2.19** *P* **84** *L* **3** # 377

Lasry, Ariel — Qualcomm Technologies, Inc.

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

PHY_S PCS Transmit includes both the HS and LS transmit paths. It could be misleading

SuggestedRemedy

Replace "PHY_S" with "PHY_S HS_TX" 2 times on line 3 and 1 time on line 4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.2.19** *P* **84** *L* **10** # 378

Lasry, Ariel — Qualcomm Technologies, Inc.

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

The referenced Figure 149-11 depicts 2 scrambler and talks about MASTER and SLAVE PHY Transmit. In Clause 191 only the bottom figure would apply and is valid for both LEADER and FOLLOWER.

SuggestedRemedy

Add a new Figure with the content of the bottom of Figure 149-11 without the text

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

PHY_D uses the top scrambler in Figure 149-11: In 191.4.2.2.6 create a Figure with the "MASTER PHY" scrambler and refer to this Figure instead of 149-11.

PHY_S uses the bottom scrambler in Figure 149-11: In 191.3.2.2.19 create a Figure with the "SLAVE PHY" scrambler and refer to this Figure instead of 149-11.

Cl **191** *SC* **191.3.2.2.20** *P* **84** *L* **21** # 414

Zimmerman, George — CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

149.3.2.2.19 has requirements in it - these need to be called out with a shall. The text also does not appropriately call out that PAM4 is only used for 10 Gb/s transmission.

SuggestedRemedy

Change "See 149.3.2.2.19" to "For 10 Gb/s transmit rate, bit pairs shall be gray-mapped for PAM4 encoding as specified in 149.3.2.2.19." add PICS to PCT section, copying PICS PCT19 in Clause 149, with status 10 Gb/s * PHY_S: M

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.2.21** *P* **84** *L* **25** # 415

Zimmerman, George — CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

149.3.2.2.20 has requirements in it - these need to be called out with a shall. The text also does not appropriately call out that PAM4 is only used for 10 Gb/s transmission.

SuggestedRemedy

Change "See 149.3.2.2.20" to "For 10 Gb/s transmit rate, gray-coded PAM4 symbols shall be precoded as specified in 149.3.2.2.20" add PICS to PCT section, copying PICS PCT20 in Clause 149, with status 10 Gb/s * PHY_S: M

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.2.21** *P* **84** *L* **26** # 379

Lasry, Ariel — Qualcomm Technologies, Inc.

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

The referenced Sub-clause 149.3.2.2.20 refers to the Infofield messages in 149.4.2.4.5 which should actually refer to 191.5.2.4.5. This is used to select the precoder in 45.2.1.246.3. But I'm not sure if this register is also applicable for Clause 191. And It talks about EEE which is not applicable.

SuggestedRemedy

Add: "EEE not supported by MutltiG+100MBASE-T1/V1 and 100M+MultiGBASE-T1/V1 PHYs, The value of precoder_type shall be set to the value of PrecodeSel received from the link partner in the Infofield messages (see 191.5.2.4.5."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by #415.

Cl **191** *SC* **191.3.2.2.22** *P* **84** *L* **29** # 416

Zimmerman, George — CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

149.3.2.2.21 has requirements in it - these need to be called out with a shall. The text also does not appropriately call out that PAM4 is only used for 10 Gb/s transmission.

SuggestedRemedy

Change "See 149.3.2.2.21" to "For 10 Gb/s transmit rate,precoded PAM4 symbols shall be encoded as specified in 149.3.2.2.21" add PICS to PCT section, copying PICS PCT21 in Clause 149, with status 10 Gb/s * PHY_S: M

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.3** *P* **84** *L* **1** # 507

Razavi, Alireza Eliyan

Comment Type **ER** *Comment Status* **D** *late - EZ*

Long sentence (39 words) reduces readability. Current text: “The PCS Receive function shall conform to the PCS 64B/65B Receive state diagram in Figure 191–19 and the PCS Receive bit ordering in Figure 191–13 for 10 Gb/s and Figure 191–14 for 5 Gb/s and 2.5 Gb/s, including compliance with the associated state variables as specified in 191.3.5.1.2.”

SuggestedRemedy

Replace with two sentences: “The PCS Receive function shall conform to the PCS 64B/65B Receive state diagram in Figure 191–19, and to the PCS Receive bit ordering in Figure 191–13 for 10 Gb/s and Figure 191–14 for 5 Gb/s and 2.5 Gb/s. Conformance includes compliance with the associated state variables specified in 191.3.5.1.2.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.3** *P* **85** *L* **7** # 456

Law, David HPE

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

Figure 191–17 'RFER monitor state diagram' uses the block_lock as an open arrow entry condition to the RFER_MT_INIT state, with subclause 191.3.5.1.2 'Variables' defining block_lock as a 'Boolean variable ...'. Further, subclause 191.3.6.1 'Status' says the block_lock bit 'Indicates the state of the block_lock variable.'. Subclause 191.4.2.3 and 191.3.2.3 'PCS Receive function', however, describe when the 'block_lock flag is de-asserted' and when the '... block_lock flag is re-asserted ...'.

SuggestedRemedy

Either change all instances of '... block_lock flag ...' to '... block_lock variable ...' or to just '... block_lock ...', as is used elsewhere in both subclauses 191.3.2.3 and 191.4.2.3.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change block_lock flag to block_lock.

Cl **191** *SC* **191.3.2.3** *P* **85** *L* **22** # 508

Razavi, Alireza Eliyan

Comment Type **ER** *Comment Status* **D** *late - EZ*

Long sentence (40 words) reduces readability. Current text: “When the PCS Synchronization process has obtained synchronization, the RS-FEC frame error ratio (RFER) monitor state diagram shown in Figure 191–17 monitors the received signal for high RS-FEC frame error ratio and asserts hi_rfer to indicate excessive RS-FEC frame errors.”

SuggestedRemedy

Replace with two sentences: “When the PCS Synchronization process has obtained synchronization, the RS-FEC frame error ratio (RFER) monitor state diagram of Figure 191–17 monitors the received signal for a high RS-FEC frame error ratio. The monitor asserts hi_rfer to indicate excessive RS-FEC frame errors.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.3.1** *P* **85** *L* **40** # 407

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

the receiver concatenates indications, not requests. The same error is made on lines 40 and 46

SuggestedRemedy

replace "concatenating requests" with "concatenating indications" on P85 L40 and 46

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.3.1** *P* **85** *L* **46** # 323

Simms, William NVIDIA

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

incorrect figure reference 191-13

SuggestedRemedy

I think it should point to 191-14 for PAM2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.3.1** *P* **85** *L* **46** # 294

van Dyck, Peter Infineon

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

Reference to wrong Figure

SuggestedRemedy

Replace:
see Figure 191–13

With:
see Figure 191–14

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.2.3.3** *P* **86** *L* **16** # 276

Jonsson, Ragnar Infineon

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

There should be a SHALL statement in "The R_BLOCK_TYPE of an invalid block is set to E."

SuggestedRemedy

Change to "The R_BLOCK_TYPE of an invalid block shall be set to E."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Also update proposed PICS as appropriate.

Cl **191** *SC* **191.3.5.1.2** *P* **88** *L* **33** # 457

Law, David HPE

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

Since subclause 191.3.2.3 'PCS Receive function' says that 'The PCS Synchronization process sets the block_lock flag to indicate whether the PCS has obtained synchronization.', suggest that subclause 191.3.5.1.2 'Variables' description of the block_lock variable reference the PCS Synchronization process.

SuggestedRemedy

Suggest that the text 'Boolean variable that is set TRUE when receiver acquires block delineation.' be updated to read 'Boolean variable that is set TRUE by the PCS Synchronization process when it acquires block delineation.'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.5.1.3** *P* **88** *L* **25** # 215

Slavick, Jeff Broadcom

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

Timers have a duration, not a trigger. It appears you want to have a timer that continously restarts over and over again.

SuggestedRemedy

Update the timer to be defined as "Timer with a duration of 125us/ 4*S + 1%, -25%. Upon completition of the timer duration the timer is immediately restarted. See Table 191-1 for the definition of S."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This is on P89L25.

This text is deleted by #52.

Cl **191** *SC* **191.3.5.1.4** *P* **89** *L* **35** # 418

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

Duplicate shall - the entire state diagram of figure 191-18 is required, having a shall only on the DECODE and ENCODE functions is duplicative.

SuggestedRemedy

Change "shall decode" to "decodes" at P89 L35 (DECODE desciption)
Change "shall encode" to "encodes" at P89 L40 (ENCODE description)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.5.2** *P* **94** *L* **1** # 419

Zimmerman, George — CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

Text should refer to the actual diagrams.Additionally, the 64B/65B state diagrams are required elsewhere in the text - Figure 191-19 is already there and Figure 191-18's requirement earlier is subject to an earlier comment of mine. These other two figures are described in the previous paragraphs so are unnecessary.

SuggestedRemedy

Change "The PCS shall perform the functions of RFER monitor, Transmit, and Receive as specified in these state
diagrams."
To "The PCS shall monitor for errors in the RS-FEC decoding as specified in Figure 191-17."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.5.2** *P* **94** *L* **31** # 458

Law, David — HPE

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

Move the transition condition 'R_TYPE(rx_coded) = T * R_TYPE_NEXT = (S + C)' to the right so it is clear that it is associated with the RX_D to RX_T transition in Figure 191–19 'PCS 64B/65B Receive state diagram'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.5.2** *P* **94** *L* **36** # 459

Law, David — HPE

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

Move the transition condition 'R_TYPE(rx_coded) = T * R_TYPE_NEXT = (S + C)' to the right so it is clear that it is associated with the RX_E to RX_T transition in Figure 191–19 'PCS 64B/65B Receive state diagram'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.6.1** *P* **95** *L* **8** # 212

Slavick, Jeff — Broadcom

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

Appears the pcs_status is considered a boolean variable. That should be indicated.

SuggestedRemedy

Insert "Boolean variable that" as the first words of the definition for pcs_status

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.6.1** *P* **95** *L* **14** # 213

Slavick, Jeff — Broadcom

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

Seems like this section is specifying what PCS variables are to defnitively be made available to management entities. Along with their mapping to MDIO register bits. For block_lock and hi_rfer these are named the same as the state diagram variables and this text implies they're identical including the names. So aren't they really the state diagram variables?

SuggestedRemedy

Change the first sentence of block_lock definition to be: The state diagram variable block_lock (see 191.3.5.1.2).
Change the first sentence of hi_rfer definition to be: The state diagram variable hi_rfer (see 191.3.5.1.2).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.7** *P* **95** *L* **38** # 148

Wienckowski, Natalie — IVN Solutions LLC; Ethernovia & Bosch

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

improve wording

SuggestedRemedy

Change: exchanging PHY link health status and message exchange.
To: exchanging PHY link health status and messages.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.7** *P* **95** *L* **38** # 421

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

The OAM behavior in 149.3.9 (including state diagrams Figure 149-24 and Figure 149-25) are not pulled in as requirements. They should be.

SuggestedRemedy

Change P95 L38 from "behavior is defined in 149.3.9" to "behavior shall be as defined in 149.3.9" add PICS as appropriate (see PICS comment)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.3.7.2** *P* **96** *L* **1** # 420

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

The OAM functions in 149.3.9.2 are not pulled in with requirement language. Further, the exceptions, are not only in 191.3.7.2.1, but are also in .2 (PHY Health) and .3 (PHY health indicator).
After requiring 191.3.7.2.1, there will be duplicate shalls...

SuggestedRemedy

Change 191.3.7.2 to from : "MultiG+100MBASE-T1/V1 OAM functions are the same as those defined for a MultiGBASE-T1 PHY in 149.3.9.2 with the exception that the MultiG+100MBASE-T1/V1 OAM frame structure, PHY health, and PHY health indicator are defined in 191.3.7.2.1."
to: "MultiG+100MBASE-T1/V1 OAM functions shall be as defined for a MultiGBASE-T1 PHY in 149.3.9.2 with the exception that the MultiG+100MBASE-T1/V1 OAM frame structure, PHY health, and PHY health indicator are defined in 191.3.7.2.1, 191.3.7.2.2, and 191.3.7.2.3, respectively."
Add pics reflecting sections of 149 and 191.3.7.2.2
Change "the first symbol (OAM<0>) shall be" to "the first symbol (OAM<0>) is" at P96 L21 (4th para 191.3.7.2.1)
Change "10-bit OAM field shall be set to all 0's" to "10-bit OAM field is set to all 0's." at P96 L31 (last para 191.3.7.2.1)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.4.1** *P* **97** *L* **15** # 8

Ran, Adee Cisco Systems

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

"The XGMII is running at 1/100th the rate of 10 Gb/s, 1/50th the rate of 5 Gb/s, and 1/25th the rate of 2.5 Gb/s"
This is a convoluted way of stating a simple thing.

Also possibly in clause 192.

SuggestedRemedy

Change to "The XGMII runs at 100 Mb/s".

Implement in clause 192 if appropriate.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

This does not apply to Clause 191.3.1 or Clause 192.

Cl **191** *SC* **191.4.2** *P* **97** *L* **22** # 149

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

improve wording and add OAM

SuggestedRemedy

Change: The LS_PATH PCS operating functions are the LS_TX PCS Transmit in the PHY_D device, and the LS_RX PCS Receive in the PHY_S device.
To: The LS_PATH PCS comprises the following functions: PCS Reset, LS_TX PCS Transmit in the PHY_D device, the LS_RX PCS Receive in the PHY_S device, and an optional PCS OAM. The PCS Transmit and PCS Receive functions execute simultaneously and asynchronously.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

There is a typo in the suggested remedy. The second sentence is already in the text and isn't included in what to change.

Change: The LS_PATH PCS operating functions are the LS_TX PCS Transmit in the PHY_D device, and the LS_RX PCS Receive in the PHY_S device.
To: The LS_PATH PCS comprises the following functions: PCS Reset, LS_TX PCS Transmit in the PHY_D device, the LS_RX PCS Receive in the PHY_S device, and an optional PCS OAM.

Cl **191** *SC* **191.4.2.1** *P* **97** *L* **33** # 423

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

There is only one PCS reset. This should just reference the earlier requirement

SuggestedRemedy

Replace the content of 191.4.2.1 with "See 191.3.2.1."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.4.2.2.3** *P* **99** *L* **28** # 150

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

missing article

SuggestedRemedy

Change: for ordered set
To: for an ordered set

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.4.2.2.4** *P* **99** *L* **44** # 408

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

The block structure is described in 149.3.2.2.4, but without a 'shall' and hence no requirement. 'shall be as specified' is therefore inappropriate.

SuggestedRemedy

Replace "The low data rate block structure shall be as specified in 149.3.2.2.4" with "See 149.3.2.2.4."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.4.2.2.6** *P* **100** *L* **42** # 403

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

The text of 191.4.2.2.6 refers to 149.3.2.2.6 where there are no requirements, only description of ordered sets used. It should not have a 'shall' here, because it is unclear what requirement is referred to. Additionally, this is an introductory section and should reflect that LPI, used in the refernece, is not used in clause 191 PHYs.

SuggestedRemedy

Change "The low data rate ordered sets shall be as specified in 149.3.2.2.6." to "The low data rate ordered set encoding is as in 149.3.2.2.6, except that the LPI ordered set is not used in Clause 191 PHYs."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.4.2.2.7** *P* **100** *L* **48** # 404

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

This text refers to Idle encoding but says "ordered sets", similarly, 191.4.2.2.8 through 191.4.2.2.11 refer to Start, Terminate, Ordered set, and Error control characters.

SuggestedRemedy

Change "ordered sets" to "Idle control character", "Start control character", "Terminate control character", "Ordered set control character", and "Error control character" in 191.4.2.2.7 through .11

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.4.2.2.8** *P* **100** *L* **52** # 425

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

149.3.2.2.9, 149.3.2.2.10, and 149.3.2.2.12 have no requirments. There should not be a shall in the references in 191.4.2.2.8, 191.4.2.2.9 and 191.4.2.2.11 to them

SuggestedRemedy

change "shall be as specified" to "are as specified" in 191.4.2.2.8, 191.4.2.2.9, and 191.4.2.2.10

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.4.2.2.12** *P* **102** *L* **7** # 56

Ran, Adee Cisco Systems

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

Missing space in "(seeFigure 191–18)"

SuggestedRemedy

insert space

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.4.2.2.12** *P* **102** *L* **7** # 519

Razavi, Alireza Eliyan

Comment Type **E** *Comment Status* **D** *late - EZ*

Missing space: “(seeFigure 191–18)”.

SuggestedRemedy

Insert a space: “(see Figure 191–18)”.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.4.2.2.12** *P* **102** *L* **9** # 497

Razavi, Alireza Eliyan

Comment Type **E** *Comment Status* **D** *late - EZ*

Missing terminal period: the sentence ends “… contain the block payload” with no period.

SuggestedRemedy

Add a period at the end of the sentence.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.4.2.2.14** *P* **102** *L* **25** # 151

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

numbers larger than 9 should be written as numbers, not as text per the IEEE Style manual

SuggestedRemedy

Change: fifty
To: 50

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.4.2.3** *P* **105** *L* **18** # 46

Muma, Scott Microchip

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

The sentence "The PCS descrambler employs the generator polynomial per Equation (149–5)." seems to be redundant, out of place, and slightly incorrect at this point

SuggestedRemedy

Delete the sentence: The PCS descrambler employs the generator polynomial per Equation (149–5).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This text is correct by #498.

Cl **191** *SC* **191.4.2.3** *P* **105** *L* **18** # 498

Razavi, Alireza Eliyan

Comment Type **E** *Comment Status* **D** *late - EZ*

“employs the generator polynomial per Equation (149–5)” should be replaced by “employs the generator polynomial per Equation (191-8)"

SuggestedRemedy

see comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.4.4** *P* **106** *L* **27** # 277

Jonsson, Ragnar Infineon

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

The description "The four training frame 65-bit blocks are then concatenated with the 10 OAM bits" is incorrect, as it implies that the 4x65-bits FOLLOW the 10 OAM bits.

SuggestedRemedy

Change to "The four training frame 65-bit blocks are followed the 10 OAM bits"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Correct grammar error in suggested remedy.

Change to "The four training frame 65-bit blocks are followed by the 10 OAM bits"

Cl **191** *SC* **191.5.2.2** *P* **109** *L* **15** # 106

Huber, Thomas Nokia

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

awkward phrase structure: "Auto-Negotation is either not enabled or is not implemented". There shouldn't be an 'is' both before the either and after the or.

SuggestedRemedy

Multiple ways this could be fixed:
1. Auto-Negotation either is not enabled or is not implemented
2. Auto-Negotiation is either not enabled or not implemented
3. Auto-Negotiation is neither enabled nor implemented.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: Auto-Negotation is either not enabled or is not implemented

To: Auto-Negotiation is either not enabled or not implemented

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Cl **191** *SC* **191.5.2.2.1** *P* **109** *L* **34** # 426

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

DME Encoding is only used by the PHY_D in normal operation. PHY_S, I believe, only uses it in link synchronization. The text gets this all confused and says that the PMA always gets single bits An (which is the wrong variable name) and encodes them as DME (which is also wrong).
The text for DME encoding also has a bunch of extraneous information about tx_mode, which properly belongs in the PMA Transmit section not in a discussion of DME encoding, such as a reference to SEND_Z.

SuggestedRemedy

Insert the following at the end of 191.5.2.2:
"When tx_mode is SEND_Z, see 191.7.2.7 for the encoding of "Z".
When tx_mode is not SEND_Z, the PHY_D PMA Transmit function, and the PHY_S PMA Transmit function in link synchronization, shall encode binary values using Differential Manchester Encoding (DME) according to the rules in 191.5.2.2.1.

Delete the first 3 paragraphs of 191.5.2.2.1 (P109 L35 through 42), and change line 44 to read: "The following rules shall apply to when DME encoding is used:"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.2.1** *P* **109** *L* **36** # 10

Ran, Adee Cisco Systems

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

The definition of the DME encoder does not mention that it is only used for the LS_PATH (based on 191.1.5).

Also possibly in clause 192.

SuggestedRemedy

Clarify that in the text.

Implement in clause 192 if appropriate.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

DME is used by both transmitters during training. 192 does not use DME.

Cl **191** *SC* **191.5.2.3** *P* **110** *L* **40** # 152

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

Polarity swaps are not limited to the balanced pair, there is a desire to correct for the signal and ground to be swapped.

SuggestedRemedy

Change: correct for pair ploarity swaps.
To: correct for polarity swaps.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.4** *P* **110** *L* **50** # 427

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

The 'shall' requirement for Figure 191-31 is repeated multiple times. We must really think someone is going to skip it! We only need to state the requirement once - in the section for both HS and LS path. It isn't like someone is going to start up one path and not the others.

SuggestedRemedy

change "shall comply with the state diagram in Figure 191-31" to "is shown in the state diagram in Figure 191-31 (see 191.5.2.6)." in 1st paragraph of 191.5.2.4 (P110 L50) and in the first paragraph of 191.5.2.5 (P114 L25).
(leave the requirement as is in the first sentence of 191.5.2.6 on P116 L15)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.4.5** *P* **112** *L* **51** # 374

Lasry, Ariel — Qualcomm Technologies, Inc.

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

Need to use appropriate PHY name

SuggestedRemedy

Replace "MultiGBASE-T1" with "MultiG+100MBASE-T1/V1, 100M+MultiGBASE-T1/V1"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace "MultiGBASE-T1" with "MultiG+100MBASE-T1/V1"

Cl **191** *SC* **191.5.2.4.5** *P* **112** *L* **53** # 375

Lasry, Ariel — Qualcomm Technologies, Inc.

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

Need to use appropriate PHY name

SuggestedRemedy

Replace "MultiGBASE-T1" with "MultiG+100MBASE-T1/V1, 100M+MultiGBASE-T1/V1"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace "MultiGBASE-T1" with "MultiG+100MBASE-T1/V1"

Cl **191** *SC* **191.5.2.4.5** *P* **112** *L* **54** # 376

Lasry, Ariel — Qualcomm Technologies, Inc.

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

Add a new sentence to this line. "InterleaverDepth indicates the requested data mode interleaving depth. PrecodeSel indicates the requested precoder, available for 10G only."

SuggestedRemedy

See comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.4.5** *P* **113** *L* **12** # 112

Lo, Willliam — Axonne Inc.

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

Various capabilities are defined but not mapped to a register.

SuggestedRemedy

The OAMen is advertised in bit 1.2311.1.
The advertised status is reported in bit 1.2312.1 of the link partner.

The VendorSpecificData to send is set via bits 1.2316:15:0 and received on the link partner bits 1.2317:15:0.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

P112L51

Change: OAMen indicates MultiGBASE-T1 OAM capability is enabled.

To: OAMen indicates MultiGBASE-T1 OAM capability is enabled. The OAMen is advertised in bit 1.2311.1. (See 45.2.1.244.5 for the definition of bit 1.23.11.1.) The link partner's OAMen is advertised in bit 1.2312.1. (See 45.2.1.245.4 for the definition of bit 1.23.12.1.)

P112L54 add new paragraph:

The VendorSpecificData the PHY sends to its link parter are bits 1.2316:15:0 (see 45.2.1.249). The VendorSpecificData received from the link partner are bits 1.2317:15:0 (see 45.2.1.250).

Cl **191** *SC* **191.5.2.4.5** *P* **113** *L* **15** # 428

Zimmerman, George — CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

The requirment here can be read to duplicate the requirement in 191.5.2.4.1 that requires reserved bits set to zero. It is rewritten to still require the bits be reserved, but reference 191.5.2.4.1. (also, 0 is changed to zero to comply with style)

SuggestedRemedy

Change "The remaining bits shall be reserved and set to 0." to "The remaining bits shall be reserved and are set to zero per 191.5.2.4.1."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.4.7** *P* **113** *L* **28** # 292

van Dyck, Peter Infineon

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

"149.4.2.4.7 Reserved fields" section is missing in Clause 191.

SuggestedRemedy

Move 191.5.2.4.8 to 191.5.2.4.9, move 191.5.2.4.7 to 191.5.2.4.8, add new section 191.5.2.4.7 with the text from 149.4.2.4.7

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This is already defined in 191.5.2.5.1.

Cl **191** *SC* **191.5.2.4.8** *P* **113** *L* **50** # 512

Razavi, Alireza Eliyan

Comment Type **ER** *Comment Status* **D** *late - EZ*

PMA MDIO function mapping identical for both high and low speed direction

SuggestedRemedy

move 191.5.2.4.8 to new section 191.5.2.6.4 and remove 191.5.2.5.6

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.4.8** *P* **114** *L* **20** # 111

Lo, Willliam Axonne Inc.

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

link_status defined but not listed in table 191-9.

SuggestedRemedy

Add to table 191-9
Link Status , MultiGBASE-T1/V1 PMA status register, 1.2310.0, link_status

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add row to the end of table 191-9.

Link Status | MultiGBASE-T1/V1 PMA status register | 1.2310.0 | link_status

Cl **191** *SC* **191.5.2.5** *P* **114** *L* **33** # 291

van Dyck, Peter Infineon

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

The 65-bit Infofield does not include the PMA MDIO function mapping

SuggestedRemedy

Replace:
191.5.2.5.2 through 191.5.2.5.6

With:
191.5.2.5.2 through 191.5.2.5.5

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.5.3** *P* **115** *L* **16** # 278

Jonsson, Ragnar Infineon

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

The statement "Any other value shall not
be transmitted and shall be ignored at the receiver" is ambigous.

SuggestedRemedy

Change to "Any value not listed in Table 191–5 for the LEADER and Table 191–6 for the FOLLOWER shall not be transmitted and shall be ignored at the receiver"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.5.4** *P* **115** *L* **47** # 371

Lasry, Ariel Qualcomm Technologies, Inc.

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

this line applies also to MultiG+100MBASE-T1/V1

SuggestedRemedy

Add ", MultiG+100MBASE-T1/V1" before "OAM"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See 191.5.2.4.5 for the MultiG+100MBASE-T1/V1 OAM requirement.

See #374 which corrects the text in 191.5.2.4.5.

Cl **191** *SC* **191.5.2.5.4** *P* **115** *L* **49** # 372

Lasry, Ariel — Qualcomm Technologies, Inc.

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

this line applies also to MultiG+100MBASE-T1/V1

SuggestedRemedy

Add ", MultiG+100MBASE-T1/V1" before "OAM"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See 191.5.2.4.5 for the MultiG+100MBASE-T1/V1 OAM requirement.

See #375 which corrects the text in 191.5.2.4.5.

Cl **191** *SC* **191.5.2.5.4** *P* **115** *L* **52** # 113

Lo, Willliam — Axonne Inc.

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

Various capabilities are defined but not mapped to a register.

SuggestedRemedy

The InterleaverDepth request is set in bits 1.2311.12:11.
The received InterleaverDepth request is reported in bit 1.2312.12:11 of the link partner.

When bit 1.2311.5 is set to 1, the PrecodeSel request is set in bits 1.2311.3:2, otherwise the PHY determines the precoder setting. The actual setting transmitted is reflected in bit 1.2310.4:3.
The received PrecodeSel request is reported in bit 1.2312.3:2 of the link partner

The OAMen is advertised in bit 1.2311.1.
The advertised status is reported in bit 1.2312.1 of the link partner.

The VendorSpecificData to send is set via bits 1.2316:15:0 and received on the link partner bits 1.2317:15:0.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add new paragraph on P115L47

The InterleaverDepth request the PHY sends to its link parter is bits 1.2311:12:11 (see 45.2.1.244.1). The InterleaverDepth request reported by the link partner is bits 1.2312:12:11 (see 45.2.1.245.1).

When bit 1.2311.5 (see 45.2.1.244.2) is set to one, the PrecodeSel request is set in bits 1.2311.3:2 (see 45.2.1.244.4); otherwise, the PHY determines the precoder setting. The actual setting transmitted is reflected in bit 1.2310.4:3 (see 45.2.1.243.5).
The received PrecodeSel request is reported in bit 1.2312.3:2 (see 45.2.1.245.3) by the link partner.

Cl **191** *SC* **191.5.2.5.4** *P* **116** *L* **1** # 430

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

The requirment here can be read to duplicate the requirement in 191.5.2.5.1 that requires reserved bits set to zero. It is rewritten to still require the bits be reserved, but reference 191.5.2.5.1. (also, 0 is changed to zero to comply with style)

SuggestedRemedy

Replace "The remaining PHY capability bits shall be reserved and set to 0." with "The remaining PHY capability bits shall be reserved and are set to zero per 191.5.2.5.1."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.5.5** *P* **116** *L* **5** # 431

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

The standard simply reserves - it is inappropriate to talk about future use. When a future use is standardized, the standard will be amended to unreserve the bits… these are just reserved bits.

SuggestedRemedy

change "contains a reserved field and are reserved for future use." to "are reserved and are set to zero per 191.5.2.5.1."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.5.5** *P* **116** *L* **5** # 293

van Dyck, Peter Infineon

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

Clear definition of reserved fields missing.

SuggestedRemedy

Append after "for future use."
"Reserved bits shall be set to 0."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Append after "for future use."
"Reserved bits shall be set to zero."

Cl **191** *SC* **191.5.2.6** *P* **116** *L* **21** # 107

Huber, Thomas Nokia

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

awkward phrase structure: "Auto-Negotation is either not enabled or is not implemented". There shouldn't be an 'is' both before the either and after the or.

SuggestedRemedy

Multiple ways this could be fixed:
1. Auto-Negotation either is not enabled or is not implemented
2. Auto-Negotiation is either not enabled or not implemented
3. Auto-Negotiation is neither enabled nor implemented.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: Auto-Negotation is either not enabled or is not implemented

To: Auto-Negotiation is either not enabled or not implemented

Cl **191** *SC* **191.5.2.6** *P* **116** *L* **38** # 47

Muma, Scott Microchip

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

The literal number would be more clear than an equation in this table

SuggestedRemedy

Change 20 - 0.384 to 19.616

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.6** *P* **117** *L* **6** # 48

Muma, Scott Microchip

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

The literal number would be more clear than an equation in this table

SuggestedRemedy

Change 20 - 0.384 to 19.616

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.6.1** *P* **118** *L* **20** # 460

Law, David HPE

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

Subclause 191.5.2.6.1 'State diagram variables' defines the pcs_data_mode variable as 'Generated by the PMA PHY Control function and indicates ... passed to the PCS via the PMA_PCSDATAMODE.indication primitive.' without defining the variable values.

SuggestedRemedy

Add the following to the definition of the pcs_data_mode variable in subclause 191.5.2.6.1.

Values:
TRUE The PCS is transmitting and receiving data from the XGMII.
FALSE The PCS is in a training or test mode.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Pcs_data_mode is first defined in 191.3.5.1.2.

Add this text on P88L45.

P118L21, Replace the definition with:
This variable is defined in 191.3.5.1.2.

Cl **191** *SC* **191.5.2.6.1** *P* **118** *L* **48** # 279

Jonsson, Ragnar Infineon

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

The PHY_D and PHY_S transition out of TRAINING at slightly different times due to the PHY_S mandatory countdown phase. When the PHY_D exits TRAINING and enters PCS_TEST (and subsequently PCS_DATA), it stops sending Infofield messages. Because the PHY_S is still in TRAINING, it checks for rem_rcvr_status = OK from the partner. If the receiver status is not latched once received, the PHY_S will clear rem_rcvr_status and hang in training.

SuggestedRemedy

Add the following after the text in line 49 on page 118: "The parameter rem_rcvr_status shall be set to the value received in the loc_rcvr_status bit in the Infofield from the remote PHY. The rem_rcvr_status is set to NOT_OK if the PCS has not decoded a valid Infofield from the remote PHY. The rem_rcvr_status is set to OK when remote PHY is transmitting SEND_N."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Implement the suggested remedy and update PICS as needed.

Cl **191** *SC* **191.5.2.6.1** *P* **119** *L* **6** # 154

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

Add true and false definitions

SuggestedRemedy

TRUE: Training has not been successfully completed.
FALSE: Training has been successfully completed.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by #460.

Cl **191** *SC* **191.5.2.6.2** *P* **119** *L* **19** # 202

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

Removed redundant statement. This is already stated in 191.1.7.

SuggestedRemedy

Delete: All timers operate in the manner described in 14.2.3.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.6.2** *P* **119** *L* **24** # 433

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

duplicate shall. The timer's behavior is required by the shall on the state diagram.

SuggestedRemedy

change "shall expire" to "expires" at P119 L24

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.6.3** *P* **120** *L* **7** # 461

Law, David HPE

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

The mr_autoneg_enable variable is used as part of the open arrow entry condition to the DISABLE_TRANSMITTER state in Figure 191–31—PHY 'Control state diagram', as well as in the transition condition from the DISABLE_TRANSMITTER state to the SILENT state. The mr_autoneg_enable variable, however, is not defined in the associated subclause 191.5.2.6.1 'State diagram variables'.

SuggestedRemedy

Add the following to subclause 191.5.2.6.1:

mr_autoneg_enable
see 98.5.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.8** *P* **122** *L* **3** # 58

Ran, Adee Cisco Systems

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

"Clause 98" should be an active cross reference.

SuggestedRemedy

Make it an active xref.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.8.1** *P* **123** *L* **43** # 463

Law, David HPE

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

Typo.

SuggestedRemedy

'mr_autoneg_enable:' should read 'mr_autoneg_enable' (remove colon).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.8.1** *P* **123** *L* **45** # 59

Ran, Adee Cisco Systems

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

"98.5.1" is formatted as external reference but exists in the draft. Also in line 48.

SuggestedRemedy

Make it an active xref (twice).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.8.2** *P* **124** *L* **44** # 381

Maguire, Valerie Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

"will be" seems to imply something in the future and I don't think this is what's intended.

SuggestedRemedy

Change "will be" to "is"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.8.2** *P* **124** *L* **46** # 434

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

duplicate shall. The timer's behavior is required by the shall on the state diagram.

SuggestedRemedy

change "shall expire" to "expires" for fail_inhibit_timer and sigdet_wait_timer (P124 L46 and L54)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.8.4** *P* **126** *L* **12** # 464

Law, David HPE

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

Figure 191–35 'PHY Link Synchronization state diagram' has two states named 'SEND_REPLY'.

SuggestedRemedy

[1] Change the 'SEND_REPLY' state on the left-hand side to 'FOLLOWER_SEND_REPLY'.
[2] Change the 'SEND_REPLY' state on the right-hand side to 'LEADER_SEND_REPLY'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.8.4** *P* **126** *L* **12** # 241

McCarthy, Frank Infineon

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

There are two SEND_REPLY states in Figure 191–35—PHY Link Synchronization state diagram. The SEND_REPLY state name is a little confusing especially for the LEADER. If the name were changed to SEND_PULSE, then the name would be more informative.

SuggestedRemedy

Change the name of the SEND_REPLY state to SEND_PULSE.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by #464.

Cl **191** *SC* **191.5.2.10** *P* **127** *L* **14** # 155

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

Remove unnecessary text

SuggestedRemedy

Delete sentence in 191.5.2.10

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.2.11** *P* **128** *L* **3** # 435

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

The requirement in 191.5.2.10.1 needs to be inferred given the way this is written. It would be clearer to call it out since the text just says "as described", and just copy down the text from 191.5.2.10.1

SuggestedRemedy

Insert at the end of 191.5.2.11 (P128 L2) "The symbol response shall comply with the electrical specifications given in 191.6.2 for the HS_TX path and 191.7.2 for the LS_TX path."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.5.6.1** *P* **128** *L* **51** # 437

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

Test mode 3 is valid only for PAM4 (10 G operation). Otherwise, {0,3} (and the precoder) are invalid to the PMA

SuggestedRemedy

Change the first sentence of the 5th paragraph of 191.6.1 (P128 L51) to read "Test mode 3 is specified for 10G+100MBASE-T1/V1 PHYs only, and is for testing precoder operation."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.6.1** *P* **128** *L* **29** # 387

Maguire, Valerie Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

Per guidance from Pete Anslow provided during P802.3dg pre-publication review, “FOLLOWER” should be “Follower” and “LEADER” should be “Leader” when referring to the operating mode of the PHY.

SuggestedRemedy

Grant Editors license to change “FOLLOWER” to “Follower” and “LEADER” to “Leader” when referring to the operating mode of the PHY.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.6.1** *P* **128** *L* **51** # 114

Lo, Willliam — Axonne Inc.

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

Clarify that test mode 3 applies only to PAM4.

SuggestedRemedy

Insert to the end of the following sentence:
"Test mode 3 is for testing the precoder operation" add:
"in MultiG+100MBASE-T1/V1 only."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by #437.

Cl **191** *SC* **191.6.2** *P* **131** *L* **50** # 438

Zimmerman, George — CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

No need for the repeated "shall" in the expanatory "i.e.," phrase for what AC-coupling means… it looks like 2 requirements

SuggestedRemedy

change "i.e., it shall present" to "i.e., it presents" at P131 L50

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.6.2** *P* **131** *L* **51** # 335

Wang, Frank — Realtek Semiconductor Corp.

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

to align with 802.3ch

SuggestedRemedy

change "dc" to "DC"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Per guidance from Pete Anslow, ac and dc correct. "AC" and "DC" should only be used when the acronym is the start of the sentence.

Cl **191** *SC* **191.6.2.1** *P* **132** *L* **37** # 439

Zimmerman, George — CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

"jitter shall be measured" is a requirement on the user, not appropriate. This same text shows up in 191.6.2.2, 191.7.2.1, and 191.7.2.2 (I think 192 is clean). If changed it should be done everywhere.

SuggestedRemedy

change "shall be measured" to "is defined when measured" in 191.6.2.1, 191.6.2.2, 191.7.2.1, and 191.7.2.2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.6.2.1** *P* **132** *L* **38** # 440

Zimmerman, George — CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

"capturing device shall be at least 200 MHz" is a requirement on the user. This same text shows up in 191.6.2.2, 191.7.2.1, and 191.7.2.2 (I think 192 is clean). If changed it should be done everywhere.

SuggestedRemedy

change "The band-pass bandwidth of the capturing device shall be at least 200 MHz" to "Conformance to this specification is defined when a capturing device with at least 200 MHz band-pass bandwidth is used."in 191.6.2.1, 191.6.2.2, 191.7.2.1, and 191.7.2.2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.6.2.4** *P* **133** *L* **35** # 11

Ran, Adee Cisco Systems

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

The clock frequency is defined with dependence on LEADER/FOLLOWER, and FOLLOWER has a single frequency of 5625/48 MHz. but it seems that this frequency should only be used for LS_TX regardless of LEADER/FOLLOWER roles.

Note that in 191.7.2.4 (which is under the LS_PATH) the nominal symbol rate is also 5625/48 MHz.

Also possibly in clause 192.

SuggestedRemedy

Change to define the frequencies for HS_TX regardless of LEADER/FOLLOWER, and state that it is for the HS_TX. In 191.7.2.4 state that it is for the LS_TX.

Implement in clause 192 if appropriate.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by #441.

Does not apply to 192.

Cl **191** *SC* **191.6.2.4** *P* **133** *L* **37** # 442

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

The short term frequency variation should apply to both leader & follower, PHY_S and PHY_D, yet is written so it only applies to a PHY_D as follower. Frankly, a follower can't really control its short term variation….

SuggestedRemedy

Change the last sentence of the 2nd paragraph in 191.6.2.4 as follows:
delete "and the short-term… 1%/second" (ending the sentence after +1/-20%) at P133 L37
Create new 3rd paragraph: "For both PHY_S and PHY_D, leader and follower, the short-term rate of frequency variation shall be less than 1% / second."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.6.2.5** *P* **133** *L* **41** # 443

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

Requiring a test to be performed is a requirement on the user - we required the device to pass the test - those requirements are already there in the paragraph.

SuggestedRemedy

Change the first sentence of 191.6.2.5 from "With the transmitter in test mode 4, transmitting in MultiG mode, and using the transmitter test fixture 1 shown in Figure 191–36 for -T1 and Figure 191–37 for -V1, the test defined in 120D.3.1.2 shall be performed."
to: "Transmitter linearity is specified with the transmitter in test mode 4, transmitting in MultiG mode, and using the transmitter test fixture 1
shown in Figure 191–36 for -T1 and Figure 191–37 for -V1, according to the test definition in 120D.3.1.2."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.6.2.5** *P* **133** *L* **46** # 502

Razavi, Alireza Eliyan

Comment Type **E** *Comment Status* **D** *late - EZ*

The acronym SNDR is used in 191.6.2.5 (transmitter linearity) and elsewhere without ever being expanded; “signal-to-noise-and-distortion ratio” does not appear anywhere in the clause.

SuggestedRemedy

Expand SNDR on first use, e.g., “signal-to-noise-and-distortion ratio (SNDR)”, and add it to the acronym list if one is maintained.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Implement the proposed change and add SNDR to 1.5 Abbreviations.

Cl **191** *SC* **191.6.3.1** *P* **136** *L* **27** # 156

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

subject/verb agreement

SuggestedRemedy

Change: and have passed
To: and has passed

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.6.3.1** *P* **136** *L* **31** # 510

Razavi, Alireza Eliyan

Comment Type **ER** *Comment Status* **D** *late - EZ*

191.6.3.1 contains a subject-verb agreement error: “The signal received at the MDI that was transmitted … and have passed through a link … shall be received…”. The singular subject “The signal” takes the plural verb “have passed”. (The parallel sentence in 191.7.3.1 correctly uses “has passed”.)

SuggestedRemedy

Change “have passed” to “has passed” in 191.6.3.1 for agreement with the singular subject, consistent with 191.7.3.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.6.3.2** *P* **136** *L* **39** # 444

Zimmerman, George CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

Somehow we wrote clause 149 without a shall in the broadband noise test section, and it propagated to here. There needs to be a requirement on noise rejection, otherwise receiver sensitivity is meaningless.

SuggestedRemedy

Change "The BER is expected to be less than" to "The BER shall be less than" and add PICS (the pics is shown in the PICS comment, but noted so it can be deleted if this comment is rejected)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.7.2.6** *P* **140** *L* **20** # 60

Ran, Adee Cisco Systems

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

"The effective transmit baseband symbols, x(n), is derived" - number mismatch.
Should be either "are derived" or refer to x(n) as a sequence.

SuggestedRemedy

Change to "The sequence of effective transmit baseband symbols, x(n), is derived"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.7.2.6** *P* **140** *L* **32** # 61

Ran, Adee Cisco Systems

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

The text above table 191-20 refers to d_{out} but in the table headings there is only d_in. I assume the "Encoded bits" columns should be d_{out}.

SuggestedRemedy

Correct the headings per the comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.8.1** *P* **144** *L* **5** # 157

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

V1 may support AN

SuggestedRemedy

Change: MultiG+100M/100M+MultiGBASE-T1
To: MultiG+100M/100M+MultiGBASE-T1/V1
Make the same change on P144L13

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.8.1** *P* **144** *L* **8** # 158

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

V1 may support AN

SuggestedRemedy

Delete: MultiG+100M/100M+MultiGBASE-V1 PHYs do not support Auto-Negotiation.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.8.1** *P* **144** *L* **8** # 49

Muma, Scott — Microchip

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

I understand that -V1 auto-negotiation is optional.

SuggestedRemedy

Delete sentence. Change previous sentence to -T1/V1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.8.1** *P* **144** *L* **13** # 50

Muma, Scott — Microchip

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

I understand that -V1 auto-negotiation is optional.

SuggestedRemedy

Change -T1 to -T1/V1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.9** *P* **144** *L* **22** # 159

Wienckowski, Natalie — IVN Solutions LLC; Ethernovia & Bosch

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

Not all -T1 link segments support all speeds as the maximum frequency changes with the speed for many parameters.

SuggestedRemedy

Change: 2.5 Gb/s, 5 Gb/s, and 10 Gb/s
To: 2.5 Gb/s, 5 Gb/s, or 10 Gb/s

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.9.1.5** *P* **146** *L* **30** # 28

Bergner, Bert — TE Connectivity

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

Screening attenuation refers to SC 149.7.1.5. This subclause defines screening attenuation with 45dB from 30MHz up to Fmax. Fmax depends on speed grade in Clause 149. Thus, we inherit the speed grade dependency from Clause 149 which will differentiate between 2.5G, 5G and 10G. This conflicts with the idea of screening and coupling attenuation in 191 to be independend of speed grade.

SuggestedRemedy

Change the sentens to " The screening attenuation of each -T1 link shall be as specified in 149.7.5.1 with Fmax = 4000 MHz."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.10** *P* **147** *L* **1** # 162

Wienckowski, Natalie — IVN Solutions LLC; Ethernovia & Bosch

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

Not all -V1 link segments support all speeds as the maximum frequency changes with the speed for many parameters.

SuggestedRemedy

Change: 2.5 Gb/s, 5 Gb/s, and 10 Gb/s
To: 2.5 Gb/s, 5 Gb/s, or 10 Gb/s

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.10.1.5** *P* **147** *L* **33** # 31

Bergner, Bert — TE Connectivity

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

Screening attenuation for -V1 coaxial unbalanced link segment: The sentence "Additional screening attenuation test methodologies are defined in Annex 149A." takes reference to clause 149A which defines screening attenuation measurement specifically for balanced link segments only. This may cause confusion.

SuggestedRemedy

Change the sentence to "The additional screening attenuation test methodologies defined in Annex 149A shall be applied with adaptation to unbalanced coaxial cabling."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by #137.

Cl **191** *SC* **191.10.1.5** *P* **147** *L* **33** # 137

Long, Richard — TE Connectivity

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

Annex 149A is specified for differential pair, text needs to be added for coax.

SuggestedRemedy

Add the following sentence after line 33 on page 147: These methodologies shall be applied with adaptation to unbalanced coaxial cabling and shall use a single 50 Ohm termination to ground.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

P147L33
Delete the sentence: Additional screening attenuation test methodologies are defined in Annex 149A.

Cl **191** *SC* **191.10.1.5** *P* **147** *L* **36** # 163

Wienckowski, Natalie — IVN Solutions LLC; Ethernovia & Bosch

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

Change the -V1 screening attenuation frequency range to match that of -T1.

SuggestedRemedy

Change 10 to 30
Also on P147L42, change 10 to 30 in the equation of f.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.10.1.5** *P* **148** *L* **4** # 27

Bergner, Bert — TE Connectivity

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

Figure 191-51 shows screening attenuation up to 5 GHz while equation (201-19) defines it to 4 GHz only. See also Boyer_Sharma_3dm_01_0526.pdf.

SuggestedRemedy

Correct Figure 191-51 and show limit line up to 4 GHz.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.10.2** *P* **148** *L* **34** # 32

Bergner, Bert — TE Connectivity

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

Coupling parameters for -V1 coaxial link segments: The sentence "Test methodologies are specified in Annex 97B." refers to Annex 97B which specifically describes cross talk measurements for balanced cabling. Especially the description in 97A "Link segment ends not under test are terminated in 100 Ohm differential mode and 200 Ohm common mode." and Figure 97B-1 may cause confusion.

SuggestedRemedy

Change the sentence to "Test methodologies are specified in Annex 97B and shall be applied with adaptation to unbalanced coaxial cabling."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add the following sentence after line 34 on page 148: These methodologies shall be applied with adaptation to unbalanced coaxial cabling and shall use a single 50 Ohm termination to ground.

Cl **191** *SC* **191.10.2.** *P* **148** *L* **38** # 33

Bergner, Bert — TE Connectivity

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

Coupling parameters between link segments: Reference to 149C.5: "For further information, see 149C.5." 149C is informative. 149C.5 specifically describes that "… care should be taken to avoid coupling between (MDI) ports." It recommends that PSANEXT between MDI ports is "... approximately the same level, but not greater, than ... specified in Equation (149-25)." This equation is the PSANEXT requirementd for balanced pair clause 149 link segments which is specified differently compared to (191-29). --> (149-25) PSANEXT>=min(75,80-5log10(f/100))

SuggestedRemedy

Replace the sentence "For further information, see 149C.5." by "The coupling between adjacent ports on a multiport MDI connector is recommended to be at the same level, but not greater, than specified for PSANEXT loss in Equation (191-20)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.11.2.1** *P* **151** *L* **2** # 164

Wienckowski, Natalie — IVN Solutions LLC; Ethernovia & Bosch

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

There is no reason to list out the Fmax frequencies again as they are already defined in Equation 191-17.

SuggestedRemedy

Replace the 3 "For …" sentences with:
Where Fmax is given by Equation (191-17).
Do the same on P152L(17-21).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.12.1** *P* **151** *L* **44** # 12

Ran, Adee — Cisco Systems

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

"Where coaxial cabling is used, the mechanical interface to the coaxial cabling is a single pin connector with a shield."
This subclause is under 191.12 which states that it addresses a single coaxnual cable. So the statement should not be conditional, and "cabling" should be simply "cable".

Also possibly in clause 192.

SuggestedRemedy

Change to "The mechanical interface to the coaxial cable is a single pin connector with a shield".

Implement in clause 192 if appropriate.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

This comment does not apply to 192.

Cl **191** *SC* **191.12.2.1** *P* **151** *L* **1** # 511

Razavi, Alireza — Eliyan

Comment Type **TR** *Comment Status* **D** *late - EZ*

191.12.2.1 (-V1 MDI return loss) states “The differential impedance at the -V1 MDI for each transmit/receiver channel …” and “For the -V1 PMD, a nominal differential characteristic is impedance of 50 Ω is used.” The -V1 medium is a single coaxial cable (single-ended), so “differential impedance” and “differential characteristic impedance” are incorrect; the sentence also has transposed words (“characteristic is impedance of”).

SuggestedRemedy

Replace “differential impedance” / “differential characteristic impedance” with “characteristic impedance” for -V1, and correct the transposed wording to “a nominal characteristic impedance of 50 Ω is used.” Also correct “transmit/receiver channel” to “transmit/receive channel”.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.12.2.1** *P* **151** *L* **51** # 499

Razavi, Alireza — Eliyan

Comment Type **E** *Comment Status* **D** *late - EZ*

Typo: “transmit/receiver channel”.

SuggestedRemedy

Change to “transmit/receive channel”.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.12.3** *P* **153** *L* **1** # 447

Zimmerman, George — CME Consulting/ADI,Cisco,Eliyan,Infineon,OnSemi,

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

The requirement to withstand high-voltage transients "per application requirements" is ill-specified. It could be anything. Better to make it an advisory statement.

SuggestedRemedy

Change "shall also withstand" to "is expected to withstand"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by #393.

Cl **191** *SC* **191.12.3** *P* **153** *L* **33** # 393

Maguire, Valerie — Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

I am concerned that "withstanding without damage high-voltage transient noises and ESD per application requirements" is a shall statement, which generates a PICS. But, how can this be validated? This sentence appears in both clause 191 and clause 192.

SuggestedRemedy

In clause 191.12.3 and 192.10.3,

Change, "The single conductor of the MDI shall also withstand without damage high-voltage transient noises and ESD per application requirements."

to, "The single conductor of the MDI is capable of withstanding high-voltage transient noises and ESD per application requirements without damage."

Alternately, delete the sentence in both locations.

Grant Editor's license to adjust PICS in clause 191 and clause 192 accordingly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

In clause 191.12.3 (P153L1) and 192.10.3 (P245L33)

Change: The single conductor of the MDI shall also withstand, without damage, high-voltage transient noises and ESD per application requirements.

To: The single conductor of the MDI should withstand, without damage, high-voltage transient noises and ESD per application requirements.

Grant Editor's license to adjust PICS in clause 191 and clause 192 accordingly.

Cl **191** *SC* **191.14** *P* **153** *L* **42** # 62

Ran, Adee — Cisco Systems

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

"Clause 31" and "Annex 31B" should be external references.

SuggestedRemedy

Format as external reference (forest green).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191** *SC* **191.14** *P* **154** *L* **3** # 14

Ran, Adee — Cisco Systems

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

Table 191-24 has numbers in bit times and pause quanta, and also in ns. The bit times and pause quanta depend on the the bit rate which is different in each direction (LS_PATH or HS_PATH), while the delay in ns does not.
There is no definition or reference for the bit time or pause quantum in each case.

I assume the first 6 rows use the high-speed bit times and the last row uses the low-speed bit times, but it takes time to figure out. It is not clear from the table that the last row has different units than the rest.

Also possibly in clause 192.

SuggestedRemedy

Add footnotes to the bit times and pause quanta headings and indicate the value in each data rate.

Implement in clause 192 if appropriate.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This is done the same in Clauses 97, 149, and 165.

This does not apply to 192.

Cl **191A** *SC* **191A** *P* **252** *L* **1** # 489

Dawe, Piers — Nvidia

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

There should be an editing instruction indicating whether this annex is new or being amended

SuggestedRemedy

Add the right editing instruction

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191A** *SC* **191A** *P* **252** *L* **20** # 129

Turner, Max Ethernovia

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

explicitly state we measure XGMII to MDI

SuggestedRemedy

The HS_PATH delay of 201.14 is composed of the HS_TX delay in the PHY_S (XGMII to MDI) and the HS_RX delay in the PHY_D (MDI to XGMII) .

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191A** *SC* **191A** *P* **252** *L* **23** # 130

Turner, Max Ethernovia

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

explicitly state we measure XGMII to MDI

SuggestedRemedy

The LS_PATH delay of 201.14 is composed of the LS_TX delay in the PHY_D (XGMII to MDI) and the LS_RX delay in the PHY_S (MDI to XGMII).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191A** *SC* **191A** *P* **252** *L* **29** # 131

Turner, Max Ethernovia

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

the "HS_TX TX_Delay" nomenclature seems excessive

SuggestedRemedy

a) The HS_TX delay is allocated 10% of the HS_PATH delay budget of Table 191-24.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191A** *SC* **191A** *P* **252** *L* **30** # 132

Turner, Max Ethernovia

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

the "HS_RX RX_Delay" nomenclature seems excessive

SuggestedRemedy

b) The HS_RX delay is allocated 90% of the H S_PATH delay budget of Table 191-24.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191A** *SC* **191A** *P* **252** *L* **31** # 133

Turner, Max Ethernovia

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

the "LS_TX TX_Delay" nomenclature seems excessive

SuggestedRemedy

c) The LS_TX delay is allocated 25% of the LS_PATH delay budget of Table 191-24.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **191A** *SC* **191A** *P* **252** *L* **32** # 134

Turner, Max Ethernovia

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

the "LS_RX RX_Delay" nomenclature seems excessive

SuggestedRemedy

d) The LS_RX delay is allocated 75% of the LS_PATH delay budget of Table 191-24.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.1** *P* **158** *L* **11** # 16

Ran, Adee Cisco Systems

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

"They also use the same TDD cycle for all data rates (see 192.3)"

Cross-reference seems to be incorrect.

SuggestedRemedy

Change to 192.3.4.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.1** *P* **158** *L* **16** # 243

Steve, Gorshe Microchip Technology

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

PAM terminology correction

SuggestedRemedy

Change "PAM 2" to "PAM2" (4 places) and "PAM 4" to "PAM4" (1place)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: PAM 2 could only be found in three places in the document.)

Change "PAM 2" to "PAM2" on P116L24, P158L18, and P158L18.

Change "PAM 4" to "PAM4" on P158L18.

Cl **192** *SC* **192.1** *P* **158** *L* **22** # 165

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

typo

SuggestedRemedy

Change: 64/65B To: 64B/65B

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.1** *P* **158** *L* **28** # 36

Muma, Scott Microchip

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

"The LEADER-FOLLOWER
relationship is predetermined via management control during initialization or via default hardware setup." appears at L28 and L31, delete one

SuggestedRemedy

Delete duplicate sentence L28-29, keep L31-32.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.1.1** *P* **158** *L* **46** # 63

Ran, Adee Cisco Systems

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

The symbols N_r, N_p, and N_z would be better written using subscript format for the r, n, and p, as is typically done for mathematical parameters, instead of using an underscore character. This would make their use in equations (e.g. 192-11) appear more readable. Similarly for N_inf and N_TDD on page 198 and possibly other symbols.

SuggestedRemedy

Change the symbols in 192.1.1.1 per the comment, and apply corresponding changes in the text throughout the document (43 instances of N_r, 42 of N_p, 21 of N_z).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.1.2** *P* **167** *L* **33** # 166

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

atypical order

SuggestedRemedy

Change: FOLLOWER-LEADER
To: LEADER-FOLLOWER

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** SC **192.1.3.1** P **162** L **17** # 244

Steve, Gorshe — Microchip Technology

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

I thought we had agreed that for consistency with other IEEE 802.3 clauses, the symbol size should be omitted from within the parentheses.

SuggestedRemedy

RS-FEC(128,122,8) should be just RS-FEC(128,122)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** SC **192.1.3.1** P **162** L **20** # 336

Wang, Frank — Realtek Semiconductor Corp.

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

insert a space between "Duration" and "="

SuggestedRemedy

change "Duration=" to "Duration ="

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** SC **192.2.1.1.1** P **167** L **6** # 65

Ran, Adee — Cisco Systems

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

"The parameter tx_mode can take on one of the following values of the form"
These are just the values, not form.

SuggestedRemedy

Delete "of the form"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Delete "of the form" in the following locations:

P70, L2
P70, L36
P72, L25
P73, L1
P73, L31
P167, L6
P167, L42
P169, L15
P169, L38
P170, L14
P170, L42
P171, L15

Cl **192** SC **192.2.1.3.1** P **168** L **18** # 167

Wienckowski, Natalie — IVN Solutions LLC; Ethernovia & Bosch

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

reword to make definitions parallel

SuggestedRemedy

Change: 10 Gb/s transmit payload in data mode
To: in data mode for10 Gb/s mode data payloads

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Page number changed from 169 to 168 in comment file.)

Accommodated by Comment #337.

Cl **192** *SC* **192.2.1.3.1** *P* **168** *L* **20** # 337

Wang, Frank — Realtek Semiconductor Corp.

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

the text for {-1, +1} is not clear to read

SuggestedRemedy

change "in data and training modes for all refresh header, 2.5 Gb/s mode, and 5 Gb/s mode data payloads."
to "2.5 Gb/s or 5 Gb/s transmit payload in data mode and all refresh header in data and training modes."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: "refresh header" should be "refresh header symbols".)

Change "in data and training modes for all refresh header, 2.5 Gb/s mode, and 5 Gb/s mode data payloads."

to "2.5 Gb/s or 5 Gb/s transmit payload in data mode and all refresh header symbols in data and training modes."

Cl **192** *SC* **192.3.2** *P* **171** *L* **37** # 169

Wienckowski, Natalie — IVN Solutions LLC; Ethernovia & Bosch

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

improve wording and add OAM

SuggestedRemedy

Change: The PCS comprises one PCS Reset function and two simultaneous and synchronous operating functions. The PCS operating functions are PCS Transmit and PCS Receive..
To: The PCS comprises the following functions: PCS Reset, PCS Transmit, PCS Receive, and an optional PCS OAM. The PCS Transmit and PCS Receive functions execute simultaneously and asynchronously.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Line number changed from 22 to 168 in comment file. No other change to Suggested Remedy.)

Change: The PCS comprises one PCS Reset function and two simultaneous and synchronous operating functions. The PCS operating functions are PCS Transmit and PCS Receive.

To: The PCS comprises the following functions: PCS Reset, PCS Transmit, PCS Receive, and an optional PCS OAM. The PCS Transmit and PCS Receive functions execute simultaneously and asynchronously.

Cl **192** *SC* **192.3.2.2** *P* **172** *L* **51** # 394

Maguire, Valerie — Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

A word seems to be missing.

SuggestedRemedy

Replace, "...to the PCS Transmit bit ordering (see Figure 192-5 and Figure 192-6)."

with, "...to the PCS Transmit bit order mapping (see Figure 192-5 and Figure 192-6).

Grant Editor's license to modify PICS to align if a change is made.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace, "...to the PCS Transmit bit ordering (see Figure 192-5 and Figure 192-6)."

with, "...to the PCS Transmit bit ordering in Figure 192-5 and Figure 192-6."

Cl **192** *SC* **192.3.2.2** *P* **173** *L* **12** # 170

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

numberssmaller than 10 should be written out per the IEEE Style manual

SuggestedRemedy

Change: 1, To: one

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: To be clear there isn't a "," after the "1".)

Change: "1"
To: "one"

Cl **192** *SC* **192.3.2.2** *P* **173** *L* **14** # 245

Steve, Gorshe Microchip Technology

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

The wording "a PAM2 symbol" implies all of the 1040 bits are mapped to a single PAM2 symbol

SuggestedRemedy

Consistent with the wording in the next paragraph, replace "a PAM2 symbol" with "PAM2 symbols"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.3.2.2** *P* **173** *L* **29** # 171

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

add a reference to the figure that shows the TDD cycle.

SuggestedRemedy

After: to complete the TDD cycle.
Add (See Figure 192-17 and Figure 192-18.)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace, "...to complete the TDD cycle."

with, "...to complete the TDD cycle (see Figure 192-17 and Figure 192-18)."

Cl **192** *SC* **192.3.2.2** *P* **173** *L* **43** # 172

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

The sequence is not generated to the PMA, it is generated and passed to the PMA.

SuggestedRemedy

Change: shall generate a sequence (On) defined in 192.3.4 to the PMA
To: shall generate a sequence (On) defined in 192.3.4, which is passed to the PMA

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Seems as though an "as" is missing here, too.)

Change: shall generate a sequence (On) defined in 192.3.4 to the PMA

To: shall generate a sequence (On) as defined in 192.3.4, which is passed to the PMA

Cl **192** *SC* **192.3.2.2** *P* **173** *L* **47** # 173

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

missing article

SuggestedRemedy

Change: makes request
To: makes a request

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: makes request

To: requests the

Cl **192** *SC* **192.3.2.2** *P* **173** *L* **52** # 174

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

use a non-breaking hyphen

SuggestedRemedy

Change the hyphen in 17-bit to a non-breaking hyphen to keep 17-bit on the same line.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.3.2.2** *P* **173** *L* **54** # 246

Steve, Gorshe — Microchip Technology

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

Since "RS-FEC(130,124) has already been introduced, it is better to use consistent RS-FEC language

SuggestedRemedy

Replace "(130,124) RS-FEC" with "RS-FEC(130,124)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.3.2.2** *P* **174** *L* **4** # 247

Steve, Gorshe — Microchip Technology

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

Since "RS-FEC(128,122) has already been introduced, it is better to use consistent RS-FEC language

SuggestedRemedy

Replace "(128,122) RS-FEC" with "RS-FEC(128,122)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.3.2.2** *P* **174** *L* **11** # 175

Wienckowski, Natalie — IVN Solutions LLC; Ethernovia & Bosch

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

break up sentence

SuggestedRemedy

Change: complete a full TDD cycle of symbols, and then the process is repeated for each TDD cycle.
To: complete a full TDD cycle of symbols. The process is repeated for each TDD cycle.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.3.2.2** *P* **174** *L* **43** # 17

Ran, Adee — Cisco Systems

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

"PCS Transmit shall generate a sequence (On) defined in 192.3.4 "

Cross-reference seems to be incorrect.

SuggestedRemedy

Change to 192.3.4.3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.3.2.2.1** *P* **174** *L* **16** # 338

Wang, Frank — Realtek Semiconductor Corp.

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

PMA training frame uses PAM2 only.

SuggestedRemedy

change "PAM2/PAM4" to "PAM2"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.3.2.2.6** *P* **179** *L* **48** # 38

Muma, Scott — Microchip

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

"remote fault and Local Fault" should have consistent capitalization

SuggestedRemedy

Change "remote fault" to "Remote Fault"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.3.2.2.7** *P* **180** *L* **5** # 395

Maguire, Valerie Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

Follow Style

SuggestedRemedy

Replace "4" with "four"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Comment Subcl entry changed from 192.3.2.7 to 192.3.2.2.7).

Replace "4" with "four"

Cl **192** *SC* **192.3.2.2.13** *P* **181** *L* **3** # 176

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

Improve wording and follow IEEE Style manual for numbers.

SuggestedRemedy

Change: Fifteen of 65B blocks
To: 15 65B blocks

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.3.2.2.15** *P* **182** *L* **3** # 39

Muma, Scott Microchip

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

The top right text in Figure 202-15 looks like it has 2 sets of characters overlaid.

SuggestedRemedy

Delete overlaid non-italicized text in top right of Figure 192-15 "m122 × L-1,m121 × L-1,.,mL-1,p1,5,.,p1,0"

Retain version of text with italicized "L"s: "m122 × L-1,m121 × L-1,.,mL-1,p1,5,.,p1,0"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: The correct reference is Figure 192-8.)

Delete overlaid non-italicized text in top right of Figure 192-8 "m122 × L-1,m121 × L-1,.,mL-1,p1,5,.,p1,0"

Retain version of text with italicized "L"s: "m122 × L-1,m121 × L-1,.,mL-1,p1,5,.,p1,0"

Cl **192** *SC* **192.3.2.2.16** *P* **182** *L* **51** # 177

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

awkward wording

SuggestedRemedy

Change: which is identified with the element of
the finite field mi,0 is the first bit transmitted.
To: which is identified with the element of the finite field, where mi,0 is the first bit transmitted.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Change to align with clause 49 and P183, L25.)

Change: "..., which is identified with the element of the finite field mi,0 is the first bit transmitted."
To: "..., which is identified with the element of the finite field. mi,0 is the first bit transmitted.."

Cl **192** *SC* **192.3.2.2.16** *P* **183** *L* **15** # 178

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

unnecessary word

SuggestedRemedy

Remove "both".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.3.2.2.17** *P* **185** *L* **8** # 71

Ran, Adee Cisco Systems

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

Equations use a mixture of standard typography and markup-style text.

SuggestedRemedy

In equations 192-4 and 192-5, change "!=" to the "not equal" sign.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.3.2.2.17** *P* **185** *L* **16** # 179

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

subject/verb agreement, the subject is scrambled payload bits, not scrambled payload

SuggestedRemedy

Change: for PAM2 is shown
To: for PAM2 are shown

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.3.2.2.17** *P* **185** *L* **18** # 339

Wang, Frank Realtek Semiconductor Corp.

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

formatting: italics and subscript

SuggestedRemedy

change "Dn[0]" to "Dn[0]"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.3.2.2.22** *P* **188** *L* **20** # 384

Maguire, Valerie Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

Missing word

SuggestedRemedy

Change, "according to following mapping"

to, "according to the following mapping"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by Comment #182.

Cl **192** *SC* **192.3.2.2.22** *P* **188** *L* **20** # 182

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

missing article

SuggestedRemedy

Change: according to following
To: according to the following

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.3.2.3** *P* **189** *L* **3** # 466

Law, David HPE

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

Figure 192-19 'RFER monitor block state diagram' uses the block_lock as an open arrow entry condition to the RFER_MT_INIT state, with subclause 192.3.5.1.2 'Variables' defining block_lock as a 'Boolean variable ...'. Further, subclause 192.3.6.1 Status 'Status' says the block_lock bit 'Indicates the state of the block_lock variable.'. Subclause 192.3.2.3 'PCS Receive function', however, describes when the 'block_lock flag is de-asserted' and when the '... block_lock flag is re-asserted ...'.

SuggestedRemedy

Either change all instances of '... block_lock flag ...' to '... block_lock variable ...' or to just '... block_lock ...' as is used elsewhere in subclause 192.3.2.3.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change all instances of "block_lock flag" to block_lock"

Cl **192** *SC* **192.3.2.3** *P* **189** *L* **4** # 340

Wang, Frank — Realtek Semiconductor Corp.

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

there is a space between "hi" and "_rfer"

SuggestedRemedy

change "hi _rfer" to "hi_rfer"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.3.2.3.3** *P* **192** *L* **32** # 341

Wang, Frank — Realtek Semiconductor Corp.

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

there is a space between "R_BLOCK_" and "TYPE"

SuggestedRemedy

change "R_BLOCK_ TYPE" to "R_BLOCK_TYPE"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.3.5.1.2** *P* **200** *L* **2** # 217

Slavick, Jeff — Broadcom

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

The definition of hi_rfer implies that it uses the rfer_timer, but Figure 192-19 appears to be controlling it.

SuggestedRemedy

Update the definition of hi_rfer to be "Boolean variable that is asserted TRUE when the rfer_cnt reaches 16 errors in one RFRX_CNT_LIMIT interval."

Delete the rfer_timer as it is not used.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by Comment #53

Cl **192** *SC* **192.3.5.1.2** *P* **200** *L* **2** # 53

Muma, Scott — Microchip

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

The definition of hi_rfer was copied from Clause 149 802.3-2022 but this was corrected in 802.3cy-2023 by changing 149.3.7.2.2. So update to match other corrections.

SuggestedRemedy

Change "rfer_timer" to "RFRX_CNT_LIMIT"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.3.5.1.2** *P* **200** *L* **6** # 467

Law, David — HPE

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

Subclause 192.3.5.1.2 'Variables' defines the pcs_data_mode variable with a cross-reference to 192.4.4.1, but then subclause 192.4.4.1 'State diagram variables' defines the pcs_data_mode variable with a cross-reference to 192.2.1.9.1. Suggest that the indirect cross-reference in subclause 192.3.5.1.2 be replaced with a direct cross-reference to 192.2.1.9.1.

SuggestedRemedy

Change 'See 192.4.4.1.' to read 'See 192.2.1.9.1'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.3.5.1.3** *P* **200** *L* **46** # 397

Maguire, Valerie — Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

Harmonize text for ENCODE (see P200,L52) and DECODE functions.

SuggestedRemedy

Replace, "The DECODE function shall decode the block based on code specified in 192.3.2.2.4."

with, "The DECODE function shall decode the block as specified in 192.3.2.2.4."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.3.5.2** *P* **205** *L* **31** # 468

Law, David HPE

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

Move the transition condition 'R_TYPE(rx_coded) = T * R_TYPE_NEXT = (S + C)' to the right so it is clear that it is associated with the RX_D to RX_T transition in Figure 191-19 'PCS 64B/65B Receive state diagram'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Comment applies to Figure 192-21.)

Move the transition condition 'R_TYPE(rx_coded) = T * R_TYPE_NEXT = (S + C)' to the right so it is clear that it is associated with the RX_D to RX_T transition in Figure 192-21 'PCS 64B/65B Receive state diagram'.

Cl **192** *SC* **192.3.5.2** *P* **205** *L* **36** # 469

Law, David HPE

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

Move the transition condition 'R_TYPE(rx_coded) = T * R_TYPE_NEXT = (S + C)' to the right so it is clear that it is associated with the RX_E to RX_T transition in Figure 191-19 'PCS 64B/65B Receive state diagram'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Comment applies to Figure 192-21.)

Move the transition condition 'R_TYPE(rx_coded) = T * R_TYPE_NEXT = (S + C)' to the right so it is clear that it is associated with the RX_E to RX_T transition in Figure 192-21 'PCS 64B/65B Receive state diagram'.

Cl **192** *SC* **192.4.2.3** *P* **208** *L* **49** # 190

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

There is only one function listed.

SuggestedRemedy

Change: include the functions of
To: include the function of

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.4.2.3** *P* **209** *L* **8** # 191

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

missing article

SuggestedRemedy

Add "the" between "receive" and "link".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.4.2.4.3** *P* **210** *L* **28** # 192

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

Add non-breaking spaces between every three digits to make the number easier to read per IEEE Style Manual

SuggestedRemedy

Change: 16776959
To: 16 776 959

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** SC **192.4.2.4.4** P **210** L **45** # 398

Maguire, Valerie — Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

If values are not transmitted, then they are not available to be ignored.

SuggestedRemedy

Replace, "Any other values shall not be transmitted and shall be ignored at the receiver."

with, "Any other values shall not be transmitted."

Grant Editor's license to adjust PICS.

Proposed Response *Response Status* **Z**

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

Cl **192** SC **192.4.2.4.4** P **210** L **47** # 193

Wienckowski, Natalie — IVN Solutions LLC; Ethernovia & Bosch

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

The rest of the paragraph uses "Message Field", but it is "Message Fields" in one spot for no apparent reason.

SuggestedRemedy

Change: Message Fields
To: Message Field

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** SC **192.4.2.4.4** P **210** L **48** # 399

Maguire, Valerie — Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

Typo

SuggestedRemedy

Replace, "Message Fields setting"

with, "Message Field setting"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by Comment #193.

Cl **192** SC **192.4.2.4.5** P **212** L **33** # 194

Wienckowski, Natalie — IVN Solutions LLC; Ethernovia & Bosch

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

It should be HS_RX, HS_TX, LS_RX, and LS_TX based on the Nomenclature in 192.1.1

SuggestedRemedy

Add missing "_" in four places in this paragraph.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** SC **192.4.2.4.6** P **213** L **40** # 195

Wienckowski, Natalie — IVN Solutions LLC; Ethernovia & Bosch

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

missing article and comma

SuggestedRemedy

Change: contains TDD delay counter sent LSB first.
To: contains the TDD delay counter, sent LSB first.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** SC **192.4.2.4.7** P **214** L **37** # 342

Wang, Frank — Realtek Semiconductor Corp.

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

insert a comma after "Oct9<7:0>"

SuggestedRemedy

change "[Oct8<7:0>, Oct9<7:0> Oct10<7:0>]" to "[Oct8<7:0>, Oct9<7:0>, Oct10<7:0>]"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.4.2.4.7** *P* **214** *L* **39** # 197

Wienckowski, Natalie — IVN Solutions LLC; Ethernovia & Bosch

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

capitalization

SuggestedRemedy

Change: Data mode
To: data mode

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.4.2.4.7** *P* **214** *L* **214** # 388

Maguire, Valerie — Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

"will be" seems to imply something in the future and I don't think this is what's intended.

SuggestedRemedy

Change "will be" to "is"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change "will be" to "may be"

Cl **192** *SC* **192.4.2.4.8** *P* **214** *L* **51** # 343

Wang, Frank — Realtek Semiconductor Corp.

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

insert a comma after "Oct9<7:0>" and remove the right round bracket after "Oct10<7:0>"

SuggestedRemedy

change "[Oct8<7:0>, Oct9<7:0> Oct10<7:0>)]" to "[Oct8<7:0>, Oct9<7:0>, Oct10<7:0>]"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.4.2.4.9** *P* **215** *L* **5** # 400

Maguire, Valerie — Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

There seems to be a comma missing and this sentence could be written more clearly.

SuggestedRemedy

Replace, "In Figure 192-25 the 16 delay elements S0,..., S15, shall be initialized to zero."

with, "The 16 delay elements, S0,..., S15, shall be initialized to zero as shown in Figure 192-25."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace, "In Figure 192-25 the 16 delay elements S0,..., S15, shall be initialized to zero."

with, "The 16 delay elements shown in Figure 192-25 shall be initialized to zero." and move this to be the last sentence in the paragraph.

Editorial license granted to adjust PICS accordingly.

Cl **192** *SC* **192.4.2.4.11** *P* **216** *L* **3** # 198

Wienckowski, Natalie — IVN Solutions LLC; Ethernovia & Bosch

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

verb tense

SuggestedRemedy

Change: arrived at the FOLLOWER
To: arrives at the FOLLOWER

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace, "...the transmit MDI shall be aligned so that it is 400 ± 1 transmit symbols after the last PMA training payload symbol from the LEADER arrived at the FOLLOWER input MDI."

with, "...the transmit MDI shall be aligned so that it is 400 ± 1 transmit symbols after the arrival of the last PMA training payload symbol from the LEADER at the FOLLOWER input MDI."

Cl **192** *SC* **192.4.2.4.11** *P* **216** *L* **13** # 199

Wienckowski, Natalie — IVN Solutions LLC; Ethernovia & Bosch

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

How are you "at" a state? It should be during, e.g. while in the state.

SuggestedRemedy

Change: At any
To: During any

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Could be written more clearly. Also missing a "then" to complete the condition.")

Replace, "At any COUNTDOWN or PCS_TEST state, if the local receiver status (indicated by loc_rcvr_status)
transitions to NOT_OK, PHY Control returns to the SILENT state and attempts a retrain."

with, "If the local receiver status (indicated by loc_rcvr_status) transitions to NOT_OK during any COUNTDOWN or PCS_TEST state, then PHY Control returns to the SILENT state and attempts a retrain."

Cl **192** *SC* **192.4.2.4.11** *P* **216** *L* **17** # 344

Wang, Frank — Realtek Semiconductor Corp.

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

change hyphen to en-dash

SuggestedRemedy

change "176 ns - delay_count" to "176 ns - delay_count"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.4.2.4.11** *P* **216** *L* **22** # 200

Wienckowski, Natalie — IVN Solutions LLC; Ethernovia & Bosch

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

missing article

SuggestedRemedy

Change: within maximum time
To: within the maximum time

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: This sentence contains two thoughts and the grammar is incorrect. Also, "allowed" should not be deleted.)

Replace, "The link_fail_inhibit_timer value is defined to be 97.5 ms, it is used to force a restart if the link up cannot be achieved within maximum allowed time."

with, "The link_fail_inhibit_timer value is defined to be 97.5 ms. It is used to force a restart if the link up cannot be achieved within the maximum allowed time."

Cl **192** *SC* **192.4.2.5** *P* **216** *L* **42** # 345

Wang, Frank — Realtek Semiconductor Corp.

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

wording

SuggestedRemedy

change "pcs_data_mode=TRUE" to "pcs_data_mode = TRUE"
and
change "link_ status" to "link_status"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.4.2.6** *P* **216** *L* **49** # 471

Law, David HPE

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

Subclause 192.4.2.6 'Clock Recovery function' says, 'The received clock signal is supplied to the PMA Transmit function by received_clock for use when configured as the FOLLOWER. Figure 192-22 'PMA reference diagram', however, shows the recovered_clock supplied to the PMA transmit function with the note 'The recovered_clock arc is shown to indicate delivery of the received clock signal back the PMA TRANSMIT for loop timing.'. In addition, subclause 192.4.2.2 'PMA Transmit function' says 'If the ... config is FOLLOWER, the PMA Transmit function shall source TX_TCLK from the recovered clock of 192.4.2.6 ...'. In addition, suggest clarifying that the config variable determines when the function is configured as FOLLOWER.

SuggestedRemedy

Suggest that the text 'The received clock signal is supplied to the PMA Transmit function by received_clock for use when configured as the FOLLOWER.' should be changed to read 'The received clock signal is supplied to the PMA Transmit function by recovered_clock for use when the config variable is set to FOLLOWER.'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.4.4.1** *P* **219** *L* **28** # 201

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

Change 01 value text to be parallel to 00 value text.

SuggestedRemedy

Change: PHY Control is currently in asymmetric training.
To: PHY Control is currently in an asymmetric training phase.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.4.4.2** *P* **219** *L* **35** # 203

Wienckowski, Natalie IVN Solutions LLC; Ethernovia & Bosch

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

Removed redundant statement. This is already stated in 191.2.7.

SuggestedRemedy

Delete: All timers operate in the manner described in 14.2.3.2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.4.4.2** *P* **219** *L* **38** # 346

Wang, Frank Realtek Semiconductor Corp.

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

When training_active = TRUE, the time for "link_fail_inhibit_timer" stays in the SILENT state should also be considered. Therefore, the description of link_fail_inhibit_timer can be rewritten as proposed change for simplicity.

SuggestedRemedy

change:
"A timer used to determine the maximum amount of time the PHY Control stays in the TRAINING, COUNTDOWN, and PCS_TEST states."
to:
"A timer used to determine the maximum amount of time the PHY Control sets training_active = TRUE."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.5.1.1** *P* **224** *L* **17** # 350

Wang, Frank Realtek Semiconductor Corp.

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

Test mode 4 in clause 192 is "transmitter distortion test", not "transmitter linearity test".

SuggestedRemedy

change "transmitter linearity" to "transmitter distortion".
Do the same implementation for line 13 of page 225 (Figure 192-31).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.5.2** *P* **225** *L* **20** # 351

Wang, Frank Realtek Semiconductor Corp.

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

to align with 802.3ch, change "ac" to "AC" and change "dc" to "DC".

SuggestedRemedy

line 21: change "ac-coupled" to "AC-coupled"; change "dc" to "DC".
line 22: change "ac-coupling" to "AC-coupling".

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Per guidance from Pete Anslow, ac and dc are correct. "AC" and "DC" should only be used when the acronym is the start of the sentence.

Cl **192** *SC* **192.5.2.2** *P* **225** *L* **43** # 204

Wienckowski, Natalie — IVN Solutions LLC; Ethernovia & Bosch

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

improve wording

SuggestedRemedy

Change: The captured block of signal shall be at least 4000 transmitted symbols long and be sampled with the minimum 10x oversampling. The transmit baud rate may be reduced to 1 Gs/s by repeating the symbols using the same
clock edge as in data mode of operation.
To: The captured block of signala shall be at least 4000 transmitted symbols long and be sampled with a minimum of 10x oversampling. The transmit baud rate may be reduced to 1 Gs/s by repeating the symbols using the same
clock edge as in the data mode of operation.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

(Editor's note: Fixed a typo in the suggested remedy.)

Change: The captured block of signal shall be at least 4000 transmitted symbols long and be sampled with the minimum 10x oversampling. The transmit baud rate may be reduced to 1 Gs/s by repeating the symbols using the same clock edge as in data mode of operation.

To: The captured block of signals shall be at least 4000 transmitted symbols long and be sampled with a minimum of 10x oversampling. The transmit baud rate may be reduced to 1 Gs/s by repeating the symbols using the same clock edge as in the data mode of operation.

Cl **192** *SC* **192.5.2.3** *P* **227** *L* **13** # 352

Wang, Frank — Realtek Semiconductor Corp.

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

typo: remove"/"

SuggestedRemedy

change "5 Gb/s/" to "5 Gb/s".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.5.2.4** *P* **227** *L* **36** # 360

Seth, Sumantra — Texas Instruments

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

Differential (Balanced) and Single Ended (Unbalanced)

SuggestedRemedy

Differential (Balanced) and Single Ended (Unbalanced) should be replaced as T1-MDI and V1-MDI to be consistent across tables.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

In Table 192-19,

Replace, "Differential (Balanced)"

with, "MDI, -T1"

Replace, "Single-ended (unbalanced)"

with, "MDI, -V1"

Cl **192** *SC* **192.5.2.4** *P* **228** *L* **15** # 83

Lusted, Kent — Synopsys

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

The abbreviation "UPSD" is not intuitively obvious to the average reader.

SuggestedRemedy

Change "UPSD" to "Upper PSD"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace, "...shall be between the upper and lower masks specified in Equation (192-17) and Equation (192-18)."

with, "shall be between the upper PSD mask specified in Equation (192-17) and the lower PSD mask specified in Equation (192-18)."

Replace, "UPSD" with "UpperPSD" in Equation (192-17).

Replace, "LPSD" with "LowerPSD" in Equation (192-18).

Cl **192** *SC* **192.5.2.4** *P* **228** *L* **24** # 84

Lusted, Kent — Synopsys

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

The abbreviation "LPSD" is not intuitively obvious to the average reader.

SuggestedRemedy

Change "LPSD" to "Lower PSD"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accommodated by Comment #83.

Cl **192** *SC* **192.5.2.6** *P* **230** *L* **25** # 392

Maguire, Valerie — Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

Typo - ")" not required

SuggestedRemedy

Replace, "1 ppm/sec)."

with, "1 ppm/sec."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.7.1.3** *P* **233** *L* **12** # 353

Wang, Frank — Realtek Semiconductor Corp.

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

change angle brackets to round brackets.

SuggestedRemedy

change "<" to "(" and change ">" to ")".
Do the same for Equation (192-26).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.7.2.1** *P* **234** *L* **22** # 354

Wang, Frank — Realtek Semiconductor Corp.

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

formatting

SuggestedRemedy

The variables (f, j, and m) in (192-21) should be italic.
Do the same for Equations (192-23), (192-28), and (192-30).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.7.2.2** *P* **235** *L* **40** # 355

Wang, Frank — Realtek Semiconductor Corp.

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

formatting: the second "f" in line 40 should be italic.

SuggestedRemedy

change "f" to "f".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.8.2.2** *P* **241** *L* **17** # 356

Wang, Frank — Realtek Semiconductor Corp.

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

formatting: the second "f" in line 17 should be italic.

SuggestedRemedy

change "f" to "f".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **192** *SC* **192.9.2.1** *P* **243** *L* **5** # 391

Maguire, Valerie Copperopolis; aff'l w/ CME Consulting, Microchip, and

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

Typo - "is" not required

SuggestedRemedy

Replace, "a nominal differential characteristic is impedance of..."

with, "a nominal differential characteristic impedance of..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.