Cl **FM** *SC* **FM** *P* **1** *L* **31** # 47

Dawe, Piers
Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

"adds MAC parameters, Physical Layers, and management parameters" but we talk about "the Physical Layer" like "the sky", although we have many "Physical Layer types" (and Physical Layer device types). This should be more like the text in the PAR 5.2.b.
Compare other projects' self descriptions:
adds Physical Layer specifications and management parameters;
includes Physical Layer specifications and management parameters;
adds 2.5 Gb/s, 5 Gb/s, 10 Gb/s, 25 Gb/s and 50 Gb/s Physical Layer specifications and management parameters;
adds 400 Gb/s Physical Layer specifications and management parameters;
adds physical layer specifications and management parameters;
includes Physical Layer specifications and management parameters.
As the PAR says, a feature of this project is "based on 100 Gb/s per lane signaling technology".
I don't see that we are adding any MAC parameters (the PAR says "Define Ethernet MAC parameters" and it looks like we are re-using what we have).

SuggestedRemedy

Change these three texts:
Page 1 line 30:
This amendment includes Media Access Control parameters for 800 Gb/s and Physical Layers and management parameters for 400 Gb/s and 800 Gb/s operation.
Page 3, Abstract:
The amendment adds MAC parameters, Physical Layers, and management parameters for the transfer of IEEE 802.3 format frames at 400 Gb/s and 800 Gb/s.
Page 13, self description:
This amendment includes Physical Layer specifications and management parameters for 400 Gb/s and 800 Gb/s operation.
All to:
This amendment adds Physical Layer specifications and management parameters for 400 Gb/s and 800 Gb/s based on based on 100 Gb/s per lane signaling.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This amendment is indeed defining MAC parameters for 800 Gb/s. It is intentional that it defines the parameters to be the same as for some previously defined Ethernet rates. This amendment defines a 800 Gb/s Ethernet generally including RS/MII, MII extender that are intended to support PHYs with lane rates other than 100 Gb/s per lane.

Cl **FM** *SC* **FM** *P* **8** *L* **15** # 40

Nicholl, Shawn
AMD

Comment Type **ER** *Comment Status* **D** *(bucket1)*

There is a typo in "Gary Nichol".

SuggestedRemedy

It should be "Gary Nicholl".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.4.145a** *P* **31** *L* **1** # 48

Dawe, Piers
Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

Missing definitions for 800GAUI-n C2C and 800GAUI-n C2M

SuggestedRemedy

Add 1.4.145a 800 Gb/s Attachment Unit Interface (800GAUI-n): Two kinds of physical instantiation of the PMA service interface to extend the connection between 800 Gb/s capable PMAs over n lanes, used for chip-to-chip (C2C) or chip-to-module (C2M) interconnections. One width of 800GAUI-n is defined: the eight-lane 800GAUI-8 C2C and 800GAUI-8 C2M. (See IEEE Std 802.3, Annex 120E.)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add a new definition for 800GAUI-n based on the definition for 400GAUI-n in 1.4.145.
Implement with editorial license.

Cl **45** *SC* **45.2.1.7.5** *P* **40** *L* **3** # 49

Dawe, Piers
Nvidia

Comment Type **T** *Comment Status* **D** *(bucket1)*

D1.0 comment 118: Missing entries in transmit fault, *receive fault and transmit disable tables*

SuggestedRemedy

In the tables for receive fault and transmit disable, include rows for 100GBASE-VR1, 100GBASE-SR1, 200GBASE-VR2, 200GBASE-SR2, 400GBASE-VR4, 400GBASE-SR4, 800GBASE-VR8, 800GBASE-SR8 and 400GBASE-DR4, 400GBASE-DR4-2, 800GBASE-DR8, 800GBASE-DR8-2 Revise the rubrics.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.138** *P* **44** *L* **25** # 50

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(bucket1)*

It's not clear if Table 45-107 - 50GAUI-n, 100GAUI-2, 200GAUI-n, and 400GAUI-n chip-to-chip transmitter equalization, receive direction, lane 0 register bit definitions - applies for 100G/lane AUIs or not. Most of 120F implies it doesn't except 120F.3.2.4 Receiver interference tolerance "Receiver interference tolerance is defined by the procedure in Annex 93C with the exception that transmitter equalization is configured by management (see 120D.3.2.3)".

SuggestedRemedy

If it applies, update 45.2.1.135, 45.2.1.136, 45.2.1.137, 45.2.1.138 to include 800GAUI-n.
If it doesn't, say so in these sections because the terms "100GAUI-2, 200GAUI-n, and 400GAUI-n" with unqualified n are too wide now, and address their use (or not) in 120F.3.2.4.
It would help to add these registers to MDIO/PMA variable mapping tables, either in the PMA clauses where there are such tables already, or the AUI annexes.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Include "800GAUI-n" in 45.2.1.135, 45.2.1.136, 45.2.1.137, 45.2.1.138 and update Annex 120F if appropriate.
Implement with editorial license.

Cl **45** *SC* **45.2.3** *P* **46** *L* **26** # 45

Huber, Tom Nokia

Comment Type **E** *Comment Status* **D** *(bucket1)*

There is some ambiguity in the use of green vs black coloring for the clause references in Table 45-233. In my understanding, green text is used to indicate a reference to a clause (or a table or figure) that is not itself present in this amendment

SuggestedRemedy

Assuming my understanding of the convention is correct, since 45.2.3.25, 45.2.3.49, and 45.2.3.58 are all present in 802.3df (because they are being modified), they should be in black text rather than green text.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.19** *P* **47** *L* **28** # 51

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

BASE-R PCS test-pattern control register (Register 3.42)
... Scrambled idle test patterns are defined for 25/40/50/100/200/400GBASE-R PCS only.

SuggestedRemedy

Add 800G

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.3.25** *P* **47** *L* **31** # 33

Ran, Adee Cisco

Comment Type **E** *Comment Status* **D** *(bucket1)*

45.2.3.25 describes the lane alignment register, with one subclause per bit; this continues in 45.2.3.26 and in the new 45.2.3.26a. With 32 lanes, we have 32 subclauses that are essentially the same.

This is repetitive, not helpful for readers, and will require further editorial work when future PCSs are defined (for example 1.6TBASE-R).

It may be better to have one subclause, 45.2.3.25.1, with a full definition of "lane 7 aligned", and have all the remaining bits defined together using something like "defined similarly to 45.2.3.25.1" - as done for example in 45.2.3.49 and 45.2.3.50.

This can remove most of the text in 45.2.3.25 (for register 3.52), 45.2.3.26 (for register 3.53), and 45.2.3.26a (for register 3.54). It may also be possible to merge these three subclauses into one (similar to 45.2.3.50).

The new text should address the number of lanes that exist in every PCS when referring to clause 82, clause 119, and clause 172.

Similar changes can be applied in 45.2.4.16 and 45.2.4.16a for PHY XS, and in 45.2.5.16 and 45.2.5.16a for DTE XS.

SuggestedRemedy

Change the structure as suggested in the comment, with editorial license.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** SC **45.2.3.26.11** P **51** L **34** # 35

Ran, Adee Cisco

Comment Type **ER** *Comment Status* **D** *(bucket1)*

Stray "1" in "(see 1119.2.6.2.2 and 172.2.6.2.2)."

SuggestedRemedy

Change "1119" to "119".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** SC **45.2.3.26.a** P **49** L **39** # 34

Ran, Adee Cisco

Comment Type **TR** *Comment Status* **D** *(bucket1)*

The new subclauses 45.2.3.2.26.a through 45.2.3.2.26.d refer to lanes 23 through 20, which exist only in the 800G PCS (clause 172). References to 82.2.19.2.2 are not required in these subclauses.

Similarly in 45.2.3.26a.1 through 45.2.3.26a.8 for lanes 31 through 24.

SuggestedRemedy

In 45.2.3.26.a, change "This bit reflects the state of am_lock[19] (see 82.2.19.2.2) or amps_lock[19] (see 172.2.6.2.2)" to "This bit reflects the state of amps_lock[19] (see 172.2.6.2.2)".

Apply similar changes in 45.2.3.26.b through 45.2.3.26.d and in 45.2.3.26a.1 through 45.2.3.26a.8.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The suggested remedy should refer to am_lock[23] rather than am_lock[19].
Implement proposed remedy, with editorial license.

Cl **45** SC **45.2.3.26a** P **49** L **39** # 123

Slavick, Jeff Broadcom

Comment Type **T** *Comment Status* **D** *(bucket1)*

df added PCS lanes 20-31, they do not exist in clause 82.

SuggestedRemedy

Remove "am_lock[##] (see 82..2.19.2.2) or" from PCS lanes 20-31

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** SC **45.2.3.48a** P **53** L **46** # 52

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

The text should mention that this is an optional feature. Also, 172.3.5 doesn't define the register (Clause 45 does that), it defines the counter.

SuggestedRemedy

For example, change
See 172.3.5 for a definition of this register.
to
See 172.3.5 for a definition of this optional counter.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement proposed remedy with editorial license

Cl **45** SC **45.2.3.48b** P **54** L **20** # 53

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

assignment of bits ... is identical to that of bin 1

SuggestedRemedy

for bin 1 ?

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The wording is correct as written. The proposed solution does not improve the accuracy or clarity of the draft.

Cl **45** SC **45.2.3.48b** P **54** L **23** # 54

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

The text should mention that this is an optional feature.

SuggestedRemedy

Add: these counters are optional.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
There is no need to mention that these counters are optional in Clause 45 because their optionality is mentioned in 172.3.6 which is referenced.
Also Clause 45 often reuses the same register definitions for different PHY types and these might differ in whether or not they are optional and mandatory

Cl **45** *SC* **45.2.3.49** *P* **54** *L* **51** # 97

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

Subject and verbs number don't match (editorial bug in base document)

SuggestedRemedy

Consider changing
The contents of the Lane 0 mapping register is valid when Lane 0 aligned bit (3.52.0) is set to one and is invalid otherwise.
to content ... is ... is or contents ... are ... are
At some stage, a wider clean-up and harmonisation (contents vs. values) would be helpful.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "is" to "are" in two places.

Cl **45** *SC* **45.2.3.63** *P* **57** *L* **8** # 98

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

See 119.3.3 and 172.3.3 for a definition of this counter.

SuggestedRemedy

See 119.3.3 or 172.3.3 for a definition of this counter.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Common practice in Clause 45 is to use the word "and" where there is a list of cross references

Cl **45** *SC* **45.2.4.4.a** *P* **59** *L* **3** # 46

Huber, Tom Nokia

Comment Type **E** *Comment Status* **D** *(bucket1)*

The title of the new clause should be 800G capable rather than 400G capable

SuggestedRemedy

Change 400G to 800G.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.4.4.a** *P* **59** *L* **59** # 44

Dudek, Mike Marvell

Comment Type **T** *Comment Status* **D** *(bucket1)*

The sub-clause title is wrong

SuggestedRemedy

Change "400G capable" to "800G capable"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.4.16a** *P* **63** *L* **25** # 99

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

5register

SuggestedRemedy

insert space. Also in 45.2.5.16a.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.4.16a.1** *P* **64** *L* **18** # 36

Ran, Adee Cisco

Comment Type **TR** *Comment Status* **D** *(bucket1)*

The new subclauses 45.2.4.16a.1 through 45.2.4.16a.8 refer to lanes 31 through 24, which exist only in the 800GXS (clause 171, based on clause 172 PCS). References to 119.2.6.2.2 are not required in these subclauses.

Also in 45.2.5.16a subclauses for the DTE XS.

SuggestedRemedy

In 45.2.4.16a.1, change "This bit reflects the state of amps_lock[31] (see 119.2.6.2.2 and 172.2.6.2.2)." to "This bit reflects the state of amps_lock[31] (see 172.2.6.2.2).".

Apply similar changes in 45.2.4.16a.2 through 45.2.4.16a.8 and in 45.2.5.16a.1 through 45.2.5.16a.8.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.4.17** *P* **65** *L* **25** # 100

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

"XS described in Clause 118 and Clause 171"
But a product complies to applies to one or the other, at any time.

SuggestedRemedy

XS described in Clause 118 or Clause 171
Also in 45.2.5.17, 45.2.5.22.2, 45.2.5.22.3 and so on

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Common practice in Clause 45 is to use the word "and" where there is a list of cross references

Cl **45** *SC* **45.2.7.12.3** *P* **78** *L* **10** # 101

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(bucket1)*

Base text says "these bits in register 7.48 and register 7.49 indicate the negotiated port type. Only one of these bits is set depending on the priority resolution function" but is this correct? There are FEC options in these registers as well as port types.

SuggestedRemedy

Revise text if appropriate

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The bits listed in the title of 45.2.7.12.3 are all for port types and not FEC options. Only one of the bits listed can be set.

Cl **120** *SC* **120.5.6** *P* **90** *L* **6** # 102

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

Annex 120F, which specifies the 200GAUI-2 and 400GAUI-4 interfaces for chip-to-chip applications.
Annex 120G, which specifies the 200GAUI-2 and 400GAUI-4 interfaces for chip-to-module applications.

SuggestedRemedy

Add 800GAUI-8

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Annex 120 specifies the PMA sublayer for 50 Gb/s Ethernet and 100 Gb/s Ethernet only. Clause 173 specifies the PMA for 800 Gb/s Ethernet. Clause 173 refers back to Clause 120 where applicable.

Cl **120F** *SC* **120F.1** *P* **234** *L* **35** # 136

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(late) (bucket1)*

Line 28 says "These interfaces", here we have "the interfaces"

SuggestedRemedy

If appropriate, change the to these at lines 35 and 42, and in 120G page 242 lines 28 and 35.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The text is correct as written, and the suggested remedy does not improve it.
On line 28, the word "these" refers to the interfaces defined in this annex right after the first time they have been listed as the subject of the previous sentence. The word "these" refers to that subject and is intended to avoid repeating the same list of names (subject of the previous sentence) in the current sentence.
On lines 35 and 42, the word "the" is part of the phrase "the C2C interfaces", and in line 42 the preceding sentence has these interfaces as part of a subordiate clause rather than as a subject.

Cl **120F** *SC* **120F.2** *P* **235** *L* **1** # 137

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(late) (bucket1)*

The C2C transmitter and the receiver use PAM4 signaling.

SuggestedRemedy

The C2C transmitter and receiver use PAM4 signaling.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **120F** *SC* **120F.5.3** *P* **240** *L* **35** # 138

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(late) (bucket1)*

Very wordy, could be condensed, but compare 120G.6.3

SuggestedRemedy

Change to
One, two, four, or eight independent data paths in each direction for 100GAUI-1 C2C, 200GAUI-2 C2C, 400GAUI-4 C2C, and 800GAUI-8 C2C, respectively

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The PICS as a form applies to a single implementation, which does not necessarily have all four C2C listed. Therefore, using the word "and" as suggested is inappropriate, and grouping the statements with "or" instead would reduce clarity.
However, the word "and" appears in the current text, and should be changed to "or".
Change: "One independent data path in each direction for 100GAUI-1 C2C, two independent data paths in each direction for 200GAUI-2 C2C, four independent data paths in each direction for 400GAUI-4 C2C, and eight independent data paths in each direction for 800GAUI-8 C2C"
to: "One independent data path in each direction for 100GAUI-1 C2C, two independent data paths in each direction for 200GAUI-2 C2C, four independent data paths in each direction for 400GAUI-4 C2C, or eight independent data paths in each direction for 800GAUI-8 C2C".

Cl **120G** *SC* **120G.3.1.5** *P* **246** *L* **26** # 32

Ran, Adee Cisco

Comment Type **ER** *Comment Status* **D** *(bucket1)*

120.5.11.2.2 is now included in this draft.
Also in 120G.3.2.2, 120G.3.3.5.2, 120G.3.3.5.3, 120G.3.4.3.2, and 120G.3.4.3.3.

SuggestedRemedy

Make all instances of 120.5.11.2.2 active cross references.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **124** *SC* **124.1** *P* **91** *L* **21** # 103

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(bucket1)*

Need a section to explain interoperability of DRn and DRn-2. Compare 140.11 and 151.12 but this is simpler.

SuggestedRemedy

Add a new sentence "The 400GBASE-DR4 and 400GBASE-DR4-2 PMDs can interoperate with each other provided that the fiber optic cabling (channel) characteristics for 400GBASE-DR4 are met, and similarly for 800GBASE-DR8 and 800GBASE-DR8-2". This could be a new subclause 124.11a but because it's so simple this time and it helps the reader understand what these PMDs can be used for, it could be added to 124.1 before 124.1.1 Bit error ratio.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Create new content, similar to subclause 140.11.1, with editorial license

---

Cl **124** *SC* **124.7.1** *P* **101** *L* **27** # 105

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

The OMAouter (max) limits are all the same (deliberately, for interoperability)

SuggestedRemedy

Change "values" to "value"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The expression "values" is generic, independent of whether values for parameters are the same or not.

Cl **124** *SC* **124.7.2** *P* **104** *L* **27** # 106

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

800GBASE-
DR8

SuggestedRemedy

Use non-breaking hyphen?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Replace hyphen with non-breaking hyphen.

Cl **124** *SC* **124.8.1** *P* **107** *L* **9** # 107

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(bucket1)*

This has e.g. "3, 5, 6, valid 400GBASE-R signal, or 800GBASE-R signal". 138 has "3, 4, 5, 6, or valid 50GBASE-SR, 100GBASE-SR2, 200GBASE-SR4, or 400GBASE-SR8 signal". 167 has "3, 4, 5, 6, or valid 100GBASE-VR1, 200GBASE-VR2, 400GBASE-VR4, 800GBASE-VR8, 100GBASE-SR1, 200GBASE-SR2, 400GBASE-SR4, or 800GBASE-SR8 signal". Is a non-valid 800GBASE-R signal allowed?

SuggestedRemedy

Change "valid 400GBASE-R signal, or 800GBASE-R signal" to "or valid 400GBASE-R or 800GBASE-R signal" three times.
Maybe in maintenance we should delete "valid" in multiple clauses.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The text of the draft is not broken. No change required

Cl **124** *SC* **124.8.9** *P* **109** *L* **1** # 108

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

Missing tab or format issue

SuggestedRemedy

fix

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement proposed remedy, with editorial license

Cl **124** *SC* **124.8.9.1** *P* **109** *L* **11** # 38

Ran, Adee Cisco

Comment Type **E** *Comment Status* **D** *(bucket1)*

The parameter in this subclause is called "receiver sensitivity (OMA_outer)" in Table 124-7 and in 124.8.9.2. For 400GBASE-DR4 it is optional, but I assume the name should be the same.

SuggestedRemedy

Insert "(OMA_outer)" after "receiver sensitivity", 3 instances in this subclause.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The existing wording is consistent with the wording in existing clauses, e.g. Clause 151. The term "receiver sensitivity" is generic and (OMAouter) just refers to the usage of OMAouter instead of average power. The proposed change does not improve the accuracy or clarity of the draft.

Cl **124** *SC* **124.11.3.3** *P* **113** *L* **33** # 39

Ran, Adee Cisco

Comment Type **E** *Comment Status* **D** *(bucket1)*

IEC 61754-7-4 does not appear in the normative references list (1.3); only 7-1 and 7-2 are listed.

SuggestedRemedy

Add a reference to the appropriate document in 1.3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #6.

Cl **124** *SC* **124.11.3.3** *P* **113** *L* **35** # 6

Ran, Adee Cisco

Comment Type **E** *Comment Status* **D** *(bucket1)*

"interface 7-4-1: <…>" - where is that one defined? Is it also IEC 61754-7-4?

SuggestedRemedy

Add "as defined in IEC 61754-7-4" after the interface name.

(If it's another document, add that instead, and make sure the document is listed in 1.3).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add "as defined in IEC 61754-7-4" after the interface name and add a reference to this document in subclause 1.3.

Cl **124** *SC* **124.12.4.4** *P* **115** *L* **24** # 109

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

Items to OM12 depend on PMD type

SuggestedRemedy

Add major options for PMD types. These items will be conditionally mandatory.
Also, adjust:
124.12.4 PICS proforma tables for Physical Medium Dependent (PMD) sublayer and medium, type 400GBASE-DR4
F1 Compatible with 400GBASE-R PCS and PMA

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add subclauses for 400GBASE-DR4-2, 800GBASE-DR8 and 800GBASE-DR8-2, similar to in-force 124.12.4.2, with editorial license.

Cl **162** *SC* **162.1** *P* **116** *L* **39** # 110

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

The document uses a mixture of 800GMII extender and 800GMII Extender (aside from "800GMII Extender Sublayer"

SuggestedRemedy

Make consistent

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "extender" to "Extender" in Table 162-3a, Table 163-3a, Table 169–4 footnote d, and the second paragraph of 170.1.

Cl **162** *SC* **162.1** *P* **117** *L* **4** # 7

Ran, Adee Cisco

Comment Type **ER** *Comment Status* **D** *(bucket1)*

In the published 802.3ck-2022, the definition of frame loss ratio is in 1.4.344. Also in 163.1.

SuggestedRemedy

Change "1.4.275" to "1.4.344", in both clauses.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **162** *SC* **162.7** *P* **122** *L* **47** # 111

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

Register for lanes 1 to 3 7 are located at an offset from the lane 0 register.

SuggestedRemedy

Suggest: Registers for lanes 1 to 3 7 are located at offsets from the lane 0 register.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "Register" to "Registers".

Cl **162** *SC* **162.8.1** *P* **123** *L* **37** # 8

Ran, Adee Cisco

Comment Type **E** *Comment Status* **D** *(bucket1)*

The location of the "NOTE" in Figure 162-2 is unusual.

SuggestedRemedy

Move the NOTE label to the lower left of the figure.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **162** *SC* **162.8.11.1** *P* **130** *L* **11** # 112

Dawe, Piers Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket1)*

These default seeds are different to the ETC defaults. Also, as the Training state machines on each lane are independent, there is no guarantee that setting the seed will have the desired effect of de-correlating the signals of lanes that share a polynomial. It would be better to give the implementer the freedom to make a good choice for his implementation. 45.2.1.168 already says "should".

SuggestedRemedy

Change "the default value of seed_i" to "the recommended default value of seed_i"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **162** *SC* **162.9.4** *P* **125** *L* **15** # 9

Ran, Adee Cisco

Comment Type **ER** *Comment Status* **D** *(bucket1)*

In the published 802.3ck-2022, the subclause reference for "Signaling rate" in Table 162-11 has been deleted. The change in the first row is not required anymore.

SuggestedRemedy

Delete the struck-out subclause reference, and delete "the first row and" in the editorial instruction.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **162** *SC* **162.14.3** *P* **129** *L* **27** # 113

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

!CR4:O.2 looks like a copy and paste from 802.3cd

SuggestedRemedy

I think it should be CR1:O.2. Also for KR in 163.13.3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
This item is from 802.3ck and is not changed by this project.
In clauses 162 and 163, AUIFEC is not a condition for any PICS item, and has no importance in these clauses.
Delete this item in both clauses.

Cl **162** *SC* **162.14.3** *P* **129** *L* **35** # 10

Ran, Adee Cisco

Comment Type **ER** *Comment Status* **D** *(bucket1)*

In the published 802.3ck-2022, the reference for item PCS400 is 162.1

SuggestedRemedy

Change 162.9.4.8 to 162.1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **167** *SC* **167.8.1** *P* **148** *L* **41** # 11

Ran, Adee Cisco

Comment Type **ER** *Comment Status* **D** *(bucket1)*

120.5.11.2.2 is now included in this draft.

SuggestedRemedy

Make 120.5.11.2.2 an active cross reference.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **167** *SC* **167.9.2** *P* **150** *L* **41** # 114

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

800GBASR-VR8

SuggestedRemedy

800GBASE-VR8

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change to "800GBASE-VR8"

Cl **167** *SC* **167.10.3.4** *P* **155** *L* **12** # 12

Ran, Adee Cisco

Comment Type **E** *Comment Status* **D** *(bucket1)*

"interface 7-4-1: <…>" - where is that one defined? Is it also IEC 61754-7-4?

SuggestedRemedy

Add "as defined in IEC 61754-7-4" after the interface name.

(If it's another document, add that instead, and make sure the document is listed in 1.3).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add "as defined in IEC 61754-7-4" after the interface name and add a reference to this document in subclause 1.3.

Cl **169** *SC* **169.5** *P* **167** *L* **14** # 117

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

"as illustrated in Figure 169–7 (single 800GAUI-n interface) and Figure 169–8 (multiple 800GAUI-n interfaces)": tautology, ambiguous as one could say that a physically instantiated AUI has an interface at each end, and the figure titles do this differently.

SuggestedRemedy

Change to "as illustrated in Figure 169-7 for a PHY with a single 800GAUI-n and in Figure 169-8 for a PHY with multiple 800GAUI-n"
In Annex 173A, adjust figure titles to be consistent with the way Figure 169-7 and Figure 169-8 are done.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
It is assumed that the comment refers to Figure 169-4 and Figure 169-5, rather than Figure 169-7 and Figure 169-8.
Implement suggested remedy with editorial license.

Cl **169** *SC* **169.8** *P* **171** *L* **9** # 119

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

Same as what?

SuggestedRemedy

Change "conforms to the same notation and conventions used in 21.6" to "conforms to the notation and conventions used in 21.6" or "conforms to the same notation and conventions as used in 21.6".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The word "same" is superfluous.
Change "conforms to the same notation and conventions used in 21.6"
To "conforms to the notation and conventions used in 21.6"

Cl **171** *SC* **171.1** *P* **179** *L* **26** # 124

Slavick, Jeff Broadcom

Comment Type **T** *Comment Status* **D** *(bucket1)*

Table 171-1 lists the AUI as Optional but at least one of them must exist.

SuggestedRemedy

Attach a footnote to each Optional that specifies that at least one is required.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement with editorial license.

Cl **171** *SC* **171.1.1** *P* **180** *L* **39** # 120

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

Some more basic, strategic concepts are missing from this list

SuggestedRemedy

Say that the 800GMII Extender uses two PCS-like entities, DTE 800GXS and PHY 800GXS, that communicate to each other over an 800GAUI-n. Say that the DTE 800GXS is similar to the Clause 72 PCS, and the PHY 800GXS is similar but used "upside down".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The figures and descriptions already provides such concepts.

Cl **171** *SC* **171.1.1** *P* **180** *L* **40** # 121

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

The 800GXS doesn't support physical instantiations of the 800GAUI-n. The 800GMII Extender uses them, or it. The XGSs connect to them or it. There are two 800GXS, not the same as each other. A 800GAUI-n has to be physical.

SuggestedRemedy

Change "The 800GXS leverages all functions in the Clause 172 PCS and supports physical instantiations of the 800GAUI-n" to "Each 800GXS leverages all functions in the Clause 172 PCS and connects to a 800GAUI-n, as shown in Figure 171-1"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **171** *SC* **171.3** *P* **182** *L* **9** # 57

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

Figure 171-2 contains the rogue capitals that have just been removed from Figure 172-2. Also, "66B" should be "66-bit", twice

SuggestedRemedy

Fix

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Update figure according to Clause 172 and change 66B to 66-bit.
Implement with editorial license.

Cl **171** *SC* **171.3** *P* **182** *L* **45** # 58

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(bucket1)*

As in Figure 172-2, functional block diagram for the PCS

SuggestedRemedy

Please indicate the position of the 800GMII

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **171** *SC* **171.3.1** *P* **183** *L* **3** # 126

Slavick, Jeff Broadcom

Comment Type **T** *Comment Status* **D** *(bucket1)*

Isn't Figure 169-3 a better reference?

SuggestedRemedy

Change the Figure referecne to 169-3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **171** *SC* **171.3.2** *P* **183** *L* **23** # 18

Ran, Adee Cisco

Comment Type **E** *Comment Status* **D** *(bucket1)*

"defined for the 32:8 PMA defined in 173.3"
The first "defined" is superfluous. Compare to the previous paragraphs, which do not have it.

SuggestedRemedy

Delete the first instance of "defined".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **171** *SC* **171.7** *P* **185** *L* **46** # 60

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

Broken variable name but it looks like there is space in this table to avoid it

SuggestedRemedy

Make the right column two characters wider, making the third column narrower.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **171** *SC* **171.7** *P* **186** *L* **6** # 125

Slavick, Jeff Broadcom

Comment Type **T** *Comment Status* **D** *(bucket1)*

Table 171-3 and 171-5 map the FEC_cw_counter and FEC_codeword_error_bin counters to PCS space.

SuggestedRemedy

Create new registers in the PHY XS and DTE XS MDIO space for these counters and map them to the new registers appropriately.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **171** *SC* **171.8.3** *P* **189** *L* **12** # 41

Nicholl, Shawn AMD

Comment Type **E** *Comment Status* **D** *(bucket1)*

Fourth row of table has text wrapped in first column.

SuggestedRemedy

Propose to widen the first column slightly to prevent wrap of *800GXS text.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **171** *SC* **171.8.4.3** *P* **190** *L* **50** # 61

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

According to 82.2.3.6, "deletion" doesn't get a special capital letter

SuggestedRemedy

Change Deletion to deletion

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **171** *SC* **171.8.4.4** *P* **191** *L* **5** # 62

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(bucket1)*

The two scramblers must be desynchronised to it's not exactly as in Clause 49 without qualification

SuggestedRemedy

Point to 172 instead of 49

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "Performs as shown in Figure 49–8"
to "Performs as described in 172.4.2.3"

Cl **172** *SC* **172** *P* **194** *L* **1** # 63

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

This style of title follows 49. Physical Coding Sublayer (PCS) for 64B/66B, type 10GBASE-R. "for" isn't great but I see why it was there in 49. Back then, 64B/66B was new and a big thing, to be contrasted with 8B/10B. Here, it's only an internal step on the way to 256B/257B with RS-FEC. Type R is very familiar now.
By the way, the copy in 172.7.2.2 differs.

SuggestedRemedy

Change the title of 172 from "172. Physical Coding Sublayer (PCS) for 64B/66B, type 800GBASE-R" to 172. Physical Coding Sublayer (PCS), type 800GBASE-R"
Here and in the PICS.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **172** *SC* **172.1.3** *P* **194** *L* **47** # 64

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

There are three things with essentially the same title:
172. Physical Coding Sublayer (PCS) for 64B/66B, type 800GBASE-R
172.1.3 Physical Coding Sublayer (PCS)
172.2 Physical Coding Sublayer (PCS)
A new reader does not see something that indicates it's an introduction.
Compare e.g. 171:
171. 800GMII Extender and 800GMII Extender Sublayer (800GXS)
171.1.1 Summary of major concepts
(and then the various hard specification subclauses are one level higher)
Also note
173.1.3 Summary of functions
173.4 Functions within the PMA

SuggestedRemedy

Change the title of 172.1.3 to "Summary of major concepts", "Principal features of the 800GBASE-R PCS" or equivalent
Change the title of 172.2 to "Detailed specifications of the 800GBASE-R PCS" or equivalent
For consistency, 137.4 Functions within the PMA could be something like Detailed specifications of functions within the PMA

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change: "172.1.3 Physical Coding Sublayer (PCS)"
To: "172.1.3 Summary of functions"

Change: "172.2.4 Transmit"
To: "172.2.4 Transmit function"

Change "171.1.1 Summary of major concepts"
To: "171.1.1 Summary of functions"
Implement with editorial license.

Cl **172** *SC* **172.1.3** *P* **194** *L* **53** # 128

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

In Section 8, "based on" appears 75 times, "based upon" 9 times. In this document, "based on" appears 11 times, "based upon" 5 times

SuggestedRemedy

Maybe we should change all the new "based upon" to "based on"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "based upon" to "based on" in this Clause

Cl **172** *SC* **172.1.3** *P* **195** *L* **5** # 66

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

Scrambling, lane synchronisation and lane re-ordering (or identification) are important enough that they should appear in this list, particularly as alignment markers appear without explanation at item e.

SuggestedRemedy

Please add them

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement suggested remedy with editorial license.

Cl **172** *SC* **172.1.3** *P* **195** *L* **5** # 65

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

Reed-Solomon encoding (decoding) the 257-bit blocks. As this code is "systematic", it can be decoded by throwing away the parity block, but that's not the point. Also, it would be good to mention FEC.

SuggestedRemedy

Change to "Encoding (decoding with correction) the 257-bit blocks with Reed-Solomon FEC

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The RS decoder is specified in 119.2.5.3 which lists correction as one of the functions of the decoder.
Per 119.2.5.3 Reed-Solomon decoder "The Reed-Solomon decoder extracts the message symbols from the codeword, corrects them as necessary, and discards the parity symbols."
The proposed change is unecessary since correction is explicitly defined as being part of the decoding process.

Cl **172** *SC* **172.1.4** *P* **195** *L* **21** # 67

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

"It is important to note that": pompous fluff, and singling out a point that isn't so special. Section 8, for example, uses "while this specification defines" three times with "It is important to note that" and three times without.

SuggestedRemedy

Delete. This is the only one in this draft.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change "It is important to note that, while this specification defines interfaces..."
to "While this specification defines interfaces..."

Cl **172** *SC* **172.2.1** *P* **197** *L* **31** # 68

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

Change of subject without indication. According to line 5, there are only two processes, Tx and Rx.

SuggestedRemedy

Insert "In | for the receive direction | Receive process". Reconcile whether PCS Synchronization process is a component of the Receive process or not.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Add "In the receive direction" to the beginning of the sentence.
The sentence becomes "In the receive direction, the PCS Synchronization process continuously monitors ..."

Cl **172** *SC* **172.2.1** *P* **197** *L* **36** # 69

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

and then reordered, deskewed, and the align_status flag is set.

SuggestedRemedy

and then reordered and deskewed, and the align_status flag is set.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **172** *SC* **172.2.4.1.1** *P* **198** *L* **32** # 70

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(bucket1)*

alternate ... alternative: shouldn't it be the same word each time? But the second one is unnecessary and there is no other stateless encoder.

SuggestedRemedy

Delete "alternative". Also in 172.2.5.8.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **172** *SC* **172.2.4.1.1** *P* **198** *L* **37** # 19

Ran, Adee Cisco

Comment Type **TR** *Comment Status* **D** *(bucket1)*

Table 172–1 has "reset" as the first column, but reset is not defined in clause 172.

Similarly, LBLOCK_T, EBLOCK_T, T_TYPE and the block types C, T, S, D, ENCODE, and tx_raw are not defined anywhere in this draft.

SuggestedRemedy

Add text pointing to the definitions of LBLOCK_T and EBLOCK_T in 119.2.6.2.1, reset and tx_raw in 119.2.6.2.2, and T_TYPE and ENCODE in 119.2.6.2.3.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.

Cl **172** *SC* **172.2.4.1.1** *P* **198** *L* **37** # 71

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

Usually we write function(something) with no space

SuggestedRemedy

Delete "alternative". Also in Table 172-4.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Delete the space in between the functions and the brackets in Table 172-1 and Table 172-4.

Cl **172** *SC* **172.2.4.1.1** *P* **198** *L* **39** # 72

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(bucket1)*

Because Figure 119-14 specifically doesn't apply, we need cross-references to define LBLOCK_T, C, T, S, ENCODE and so on

SuggestedRemedy

Provide the cross-references. Also for the stateless decoder in 172.2.5.8.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Resolve using the response to comment #19.

Cl **172** *SC* **172.2.4.1.1** *P* **198** *L* **40** # 73

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(bucket1)*

No indication as to how to add block types

SuggestedRemedy

If you mean "or" as in Table 172-4, change + to or, 4 times.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **172** *SC* **172.2.4.1.1** *P* **198** *L* **40** # 20

Ran, Adee Cisco

Comment Type **TR** *Comment Status* **D** *(bucket1)*

Table 172-1 column "T_TYPE (tx_raw_i-1)" has cells with the strings "C + T" and "S + D". These seem to be based on the state diagram convention that "+" is a logical-OR, but this is not a state diagram, and the letters are not conditions, so it isn't very clear. Using "or" would be preferable (as in the similar Table 172–4).

In addition, for each of these two strings there are two rows with two values in "T_TYPE (tx_raw_i)" column; these can be merged with the word "or" as well.

SuggestedRemedy

Merge rows 2 and 5 to a single row with columns:
"0 | C or T | C or S | ENCODE (tx_raw_i)".
Merge rows 3 and 4 to a single row with columns:
"0 | S or D | D or T | ENCODE (tx_raw_i)".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The table is accurate as is. The proposed merging of rows does not improve the accuracy or clarity of the specification. However, the "+" symbol should be changed to the word "or". Also, reordering the rows would be helpful.
Replace "+" with "or" in Tables 172-1 and 172-4.
Move row 5 to row 2, where row 1 is the row with reset = 1.

Cl **172** *SC* **172.2.4.4** *P* **199** *L* **23** # 75

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

"n"

SuggestedRemedy

Usually n is a number of things (cardinal number) and i is an index (ordinal) number. Wouldn't i (italic) be more usual?

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change variable "n" to "k" in 172.2.4.4 and in Figure 172-3.

Cl **172** *SC* **172.2.4.4** *P* **199** *L* **25** # 76

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

It would help the reader understand tables 172-2 and 3 to provide some of the information from 119.2.4.4. Also to save reverse engineering the tables, we can say what the difference between the tables is.

SuggestedRemedy

Add: In Table 172-2 and Table 172-3, CM0 to CM5 are the same for all PCS lanes, UM0 to UM5 are unique per lane, and UP0 to UP2 are a pad per lane. UP0 to UP2 for lanes 16 to 31 are the same as those for lanes 0 to 15, respectively.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Subclause 172.2.4.4 points the reader to subclause 119.2.4.4 which describes the CM, UM and UP fields. No need to repeat it since the clause refers to Clause 119.

Cl **172** *SC* **172.2.4.4** *P* **200** *L* **4** # 22

Ran, Adee Cisco

Comment Type **E** *Comment Status* **D** *(bucket1)*

The PCS AM tables do not convey to the reader the structure of the AMs (common and unique contents).

This can be improved by splitting the "Encoding" column into 4 columns:
- CM0, CM1, CM2 (straddled, the same values for all lanes)
- UP0 (unique per lane)
- CM3, CM4, CM5 (straddled, the same values for all lanes)
- The rest (unique per lane)

The two tables can also be joined to one table with 32 rows.

SuggestedRemedy

Change tables 172-2 and 172-3 as described.
Consider merging the two tables.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The format of tables 172-2 and 172-3 are same as the AM tables from Cl119. There isn't sufficient justification to support the suggested remedy.

Cl **172** *SC* **172.2.4.4** *P* **200** *L* **5** # 77

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

These tables are still very hard to use because the ~headers don't line up with the ~columns

SuggestedRemedy

For the header row, insert a space after each comma

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The format of tables 172-2 and 172-3 are same as the AM tables from Cl119. There isn't sufficient justification to support the suggested remedy."

Cl **172** *SC* **172.2.4.4** *P* **201** *L* **39** # 78

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

x

SuggestedRemedy

Use multiplication symbol, twice

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **172** *SC* **172.2.4.9** *P* **202** *L* **48** # 122

Slavick, Jeff Broadcom

Comment Type **T** *Comment Status* **D** *(bucket1)*

To make this section agnostic to the MII rate for referencing in the future. We could refer to the service interface insteead.

SuggestedRemedy

Change "PCS at the 800GMII" to "PCS, at the PCS service interface,"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
Clause 172 defines a PCS for 800 Gb/s Ethernet so there is no reason for the specification to be rate agnostic. The term 800GMII is more frequently used than "PCS Service Interface" for similar context. The proposed change does not improve the accuracy or clarity of the draft.

Cl **172** *SC* **172.2.4.9** *P* **202** *L* **52** # 79

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(bucket1)*

This mentions the test-pattern control register (bit 3.42.3). But does 3.42.7 Scrambled idle test-pattern apply also?

SuggestedRemedy

Please clarify, and please refer to 172.3.1 PCS MDIO function mapping

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The pattern selection bits were implemented for lower rate PCS specifications (e.g., 10GBASE-R) where the PCS supported more than one pattern type. For the 100GBASE-R, 200GBASE-R, 400GBASE-R, and now 800GBASE-R PCS, only one pattern is supported, so a separate bit to select a pattern type is not required. The bit 3.42.7 defined in 45.2.3.19.1 is not specified for use with any PCS in the base standard. The scrambled idle pattern is therefore enabled or disabled using bit 3.42.3 only.

Cl **172** *SC* **172.2.5.2** *P* **203** *L* **12** # 80

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

PCS lanes can be received on different lanes of the service interface from which they were originally transmitted - needs rewording?

SuggestedRemedy

Suggest:
The signals received by a PCS can contain PCSLs in a different arrangement to the lane ordering at the transmitting PCS. The PCS receiver is capable of receiving PCSLs in any arrangement.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This text is consistent with the text Clause 119. The text is sufficiently clear as written. The proposed remedy does not improve the clarity or accuracy of the draft.

Cl **172** *SC* **172.2.5.8.1** *P* **204** *L* **18** # 23

Ran, Adee Cisco

Comment Type **TR** *Comment Status* **D** *(bucket1)*

Table 172–4 has "reset" as the first column, but reset is not defined in clause 172.

Similarly, LBLOCK_R, EBLOCK_R, R_TYPE, and the block types E, S, D, T, C, DECODE, and rx_raw are not defined anywhere in this draft.

SuggestedRemedy

Add text pointing to the definitions of LBLOCK_R and EBLOCK_R in 119.2.6.2.1, reset and rx_raw in 119.2.6.2.2, and R_TYPE and DECODE in 119.2.6.2.3.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.

Cl **172** *SC* **172.2.5.8.1** *P* **204** *L* **23** # 24

Ran, Adee Cisco

Comment Type **TR** *Comment Status* **D** *(bucket1)*

In Table 172-4, row 3, column "R_TYPE (rx_coded_i)", the value is "S or D or T or C".

The possible R_TYPE values (based on 119.2.6.2.3) are C, LI, S, T, D, and E; LI is not valid for clause 172 (per 172.2.3, EEE and low power idle are not supported). Therefore, "S or D or T or C" is equivalent to "not E". This excludes only the combination "E | E".

However, the combination "E | E" matches the second row, and therefore results in the same rx_raw, EBLOCK_R. So having R_TYPE(rx_coded_i-1)=E with any value of R_TYPE(rx_coded_i) would result in EBLOCK_R.

This means the table can be simplified and made more readable.

SuggestedRemedy

Change the third row to the following contents:
"0 | E | any block type | EBLOCK_R".

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The proposed change includes a condition covered by the previous row. There is no need to cover the same condition in two rows if avoidable.
The table is correct as written. The proposed changes do not improve the clarity or accuracy.

Cl **172** *SC* **172.2.6.1** *P* **204** *L* **38** # 81

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(bucket1)*

"its value is to be incremented": by how much? Does it depend on the circumstances?

SuggestedRemedy

Add "by one", or whatever is meant.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change from "is to be incremented" to "is to be incremented by 1".

Cl **172** *SC* **172.2.6.2.2** *P* **205** *L* **21** # 82

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

this variable mapped per Table

SuggestedRemedy

this variable is mapped per Table
Also at line 28

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **172** *SC* **172.3.3** *P* **209** *L* **20** # 83

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

Without the information in 119.3.3, the title is ambiguous or misleading. This isn't a count of uncorrected codewords which would include the ones that didn't have errors and didn't need correcting; it's a count of errored codewords that were not corrected.

SuggestedRemedy

Add sentence: This counter counts FEC codewords that contain errors that were not corrected.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The text says the definition of the counter is same as in 119.3.3 and provides the reference. The name of the counter is same as in Cl119. Not sufficient justification to make the proposed change.

Cl **173** *SC* **173.1.3** *P* **212** *L* **51** # 84

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(bucket1)*

Adapt the PCSL (PCS lane) formatted signal to the appropriate number of abstract or physical lanes

SuggestedRemedy

Adapt the PCSL (PCS lane) formatted signal to the appropriate number and grouping of abstract or physical lanes

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The constrained grouping of lanes is part of the "adapt" process and does not need to be listed as a detail here. Instead, this detail is specified in 173.4. The proposed change is not necessary.
However, the acronym PCSL is not properly introduced in this clause.
Change "PCSL (PCS lane)" to "PCS lane (PCSL)".

Cl **173** *SC* **173.1.3** *P* **213** *L* **10** # 85

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(bucket1)*

In common cases (800GAUI-8) receive link status information may be used but isn't forwarded.
"Provide receive link status information in the receive direction": do we need another bullet, that when connected to a PHY XS, it provides link status information in the transmit (egress) direction?

SuggestedRemedy

Per comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The opening sentence in 173.1.3 states "The following is a summary of the principal functions implemented (when required) by the PMA in both the transmit and receive directions:" The phrase "when required" implies that some of the funcitons listed are conditional upon the PMA type. The requirement for each of the functions listed is specified per PMA type in 173.4.

Cl **173** *SC* **173.1.3** *P* **213** *L* **11** # 86

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

173.4 says "Three forms of the 800GBASE-R PMA are defined: 32:8, 8:32, and 8:8" but that information is needed earlier, in 173.1.4, 173.2 and 173.3

SuggestedRemedy

Insert a sentence here, saying that.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy with editorial license.

Cl **173** *SC* **173.3** *P* **215** *L* **43** # 127

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(bucket1)*

"For the 8:32 PMA ... In this case a PHY_XS:IS_SIGNAL.indication primitive is not received from the PHY 800GXS". Why not? The module knows if its incoming signal is good or not, so it can pass that information to the 8:32 PMA, which can e.g. squelch appropriately. This would be a normal behaviour for non-XS modules.

SuggestedRemedy

Discuss

Proposed Response *Response Status* **W**

PROPOSED REJECT.
A PHY_XS:IS_SIGNAL.indication is not defined for the PHY XS. See Figure 171-2 and Figure 169-3. The PCS below the PHY 800GXS does not pass any signal state information up to the PHY 800GXS on the receive path. Similarly, the PHY 800GXS receiver path has no signal state detection so there is no status to pass along.

Cl **173** *SC* **173.3** *P* **215** *L* **49** # 26

Ran, Adee Cisco

Comment Type **ER** *Comment Status* **D** *(bucket1)*

"The PHY_XS:IS_SIGNAL.request primitive is generated through a set of SIL that reports signal health"

"SIL" is defined in 173.2 as a function, not a set.

SuggestedRemedy

Change the quoted sentence to "The PHY_XS:IS_SIGNAL.request primitive is generated through a signal indication logic (SIL) function that reports signal health".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **173** *SC* **173.4** *P* **217** *L* **6** # 87

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(bucket1)*

PMA:IS_UNITDATA_0:31.request would be better shown as PMA:IS_UNITDATA_0:15.request and PMA:IS_UNITDATA_16:31.request as in Figure 172-2. The PMA doesn't really know lane numbers, it doesn't read alignment markers, but it needs to know the two groups to apply the restricted bit muxing rules.
The output lanes can stay as one group.

SuggestedRemedy

Show two groups of 16 input lanes, PMA:IS_UNITDATA_0:15.request and PMA:IS_UNITDATA_16:31.request.
Similarly for the 32 PHY_XS:IS_UNITDATA_0:31.indication lanes in Figure 173-4, 8:32 PMA functional block diagram.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
There are 32 PCS lanes represented by PMA:IS_UNITDATA_0:31. Figure 172-2 shows the two groups, one from 0:15 and the other from 16:31, to show how the lanes from each flow map to the set of 32 PCS lanes. Showing the separation of the two groups of lanes in this PMA diagram is not helpful. Since the PMA is connected directly to the PCS (colocated), the lane numbers are known by the PMA.

Cl **173** *SC* **173.4.3.1** *P* **221** *L* **27** # 93

Dawe, Piers Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket1)*

This says "the PMA ... shall produce no more than" while 173.4.3.3 says "the PMA ... shall generate no more than"

SuggestedRemedy

If there is a difference between produce and generate, as I suspect there is, explain. If there isn't, use one word not two.
See another comment that the limits are higher than needed now.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Wording should be consistent with other similar specifications and the heading titles. In 173.4.3.1, change "produce" to "generate".

Cl **173** *SC* **173.4.3.3** *P* **221** *L* **43** # 94

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(bucket1)*

Not clear "as well" as what.

SuggestedRemedy

Please explain.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the last sentence in 173.4.3.3
from:
"If there is a physically instantiated 800GAUI-8 as well, then the Skew measured at SP1 is limited to no more than 29 ns of Skew and no more than 200 ps of Skew Variation."
to:
"In an implementation with one or more physically instantiated 800GAUI-8 interfaces, then the Skew measured at the input to the PMA adjacent to the PMD service interface (SP1 in Figure 169–4 and Figure 169–5) is limited to no more than 29 ns of Skew and no more than 200 ps of Skew Variation"

Cl **173** *SC* **173.4.5** *P* **222** *L* **38** # 95

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *(bucket1)*

This says that the clock architecture is identical to that specified in 120.5.5.
Clocking architecture not clock architecture
Rates in 120.5.5 are based on bit rates, here bit rate is not mentioned.
120.5.5 addresses cases of 200GBASE-R and 400GBASE-R, not 800G.
120.5.5 says "... rearrangement of PCSLs between input lanes and output lanes (although rearrangements are allowed)" but this clause has rules forbidding some rearrangements.

SuggestedRemedy

Add material to define what the clocking architecture for this clause is

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Rewrite this subclause such that the differences in 800GBASE-R are clear.

Cl **173** *SC* **173.4.7.2** *P* **223** *L* **1** # 28

Ran, Adee Cisco

Comment Type **ER** *Comment Status* **D** *(bucket1)*

The title "Precoding for PAM4 encoded lanes" is used in clause 120, but in clause 173 all lanes are PAM4 encoded.

SuggestedRemedy

Change the title to "Precoding".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Implement the suggested remedy and make a similar change to 173.4.7.1

Cl **173** *SC* **173.4.8** *P* **223** *L* **30** # 129

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(bucket1)*

This says that the PMA link status functions identically to that specified in 120.5.8. 120.5.8 says "the PMA shall provide link status information to the PMA client using the PMA:IS_SIGNAL.indication primitive." That's too simple; this primitive is not carried over the AUI, and for the 8:32 PMA, link status

SuggestedRemedy

Please write out what actually happens

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Delete the reference to 120.5.8. Add text to explain how the PMA link status is handled for the different PMA options and highlight the fact that PMA:IS_SIGNAL.indication primitive. is not carried over an AUI. Implement with editoiral licence.

Cl **173** *SC* **173.4.11** *P* **223** *L* **47** # 30

Ran, Adee Cisco

Comment Type **ER** *Comment Status* **D** *(bucket1)*

120.5.11.2 is now included in this draft.

SuggestedRemedy

Make 120.5.11.2 an active cross reference.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **173** *SC* **173.5** *P* **224** *L* **10** # 96

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(bucket1)*

This says MMDs 8, 9, and 10 while 173.1.4 says 1, 8, 9, 10, and 11

SuggestedRemedy

Reconcile 11

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the text at line 9 from:
"For implementations with multiple PMA sublayers, additional PMA sublayers use the corresponding register and bit numbers in MMDs 8, 9, and 10 as necessary."
to:
"For implementations with multiple PMA sublayers, additional PMA sublayers use the corresponding register and bit numbers in MMDs 8, 9, 10 and 11 as necessary."

Cl **173** *SC* **173.5** *P* **225** *L* **12** # 134

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(late) (bucket1)*

I expected to see registers 1.604, 1.605 and 1.606, precoder request, in Table 173-4, MDIO/PMA status variable mapping

SuggestedRemedy

Add these registers

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
It is assumed that the comment refers to Table 173-3 rather than Table 173-4.
In registers 1.605 (subclause 45.2.1.144) and 1.606 (subclause 45.2.1.145) add bits for lanes 2 to 7.
In Table 173-3, add rows for registers 1.604, 1.605, and 1.606.
Implement with editorial license.

Cl **173** *SC* **173.6.3** *P* **227** *L* **12** # 135

Dawe, Piers Nvidia

Comment Type **T** *Comment Status* **D** *(late) (bucket1)*

Upstream and downstream have defined meanings: see 1.4.291 and 1.4.586. Upstream is towards the core of the network and downstream is towards the periphery. NOT towards the MAC vs. towards the medium.

SuggestedRemedy

These could be called TOP and BOT, or A and B for above and below, picking up wording used later in this table

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
There is a editor's note on page 226 that states "Editor’s note: In this draft, the PICS are not yet complete and further updates will be made in a future draft."
Rewrite the PICS as appropriate for this clause.

Cl **173** *SC* **173.6.5** *P* **229** *L* **20** # 31

Ran, Adee Cisco

Comment Type **ER** *Comment Status* **D** *(bucket1)*

120.5.11.2.2 is now included in this draft.

SuggestedRemedy

Make all instances of 120.5.11.2.2 in this table active cross references.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.