Cl **FM** SC **FM** P **1** L **32** # 28

Anslow, Pete Independent

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

The copyright_year variable should be set to "2020" in all clauses in the book. This is not the case for the front matter

SuggestedRemedy

set the copyright_year to 2020 in the front matter

Response *Response Status* **C**

ACCEPT.

Cl **FM** SC **FM** P **20** L **44** # 5

Dawe, Piers Nvidia

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

It's been years since P802.3bj and IEEE P802.3bk were amendment projects.

SuggestedRemedy

Replace these with the current list of amendment projects. Pages 11 and 12 show some of them. P802.3cr, P802.3cu, P802.3cp, P802.3ck, and more.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This is from the latest template of P802_3xx_D0p1_version_4p3. They are in an editorial note which will be removed before publication. Suggest to use recent examples as in other projects.

Cl **44** SC **44.3** P **25** L **6** # 6

Dawe, Piers Nvidia

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

8023.ch

SuggestedRemedy

802.3ch

Response *Response Status* **C**

ACCEPT.

Cl **44** SC **44.3** P **25** L **14** # 29

Anslow, Pete Independent

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

In the new row in Table 44-2, "24576" should have a space as a thousands separator.

SuggestedRemedy

Change "24576" to "24 576"

Response *Response Status* **C**

ACCEPT.

Cl **45** SC **45.2.1.110** P **34** L **38** # 27

Slavick, Jeff Broadcom

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

There are more than one RS-FEC available in the IEEE standard. So removing the description of which one this bit enables in the description can cause confusion.

SuggestedRemedy

Change "The" to "Clause 108" for both instances

Response *Response Status* **C**

ACCEPT.

Cl **45** SC **45.2.1.110** P **34** L **38** # 30

Anslow, Pete Independent

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

The name of bit 1.200.2 has been changed from "25G RS-FEC Enable" to "RS-FEC Enable" here and in Table 108-1. However, the name has not been changed in 45.2.1.110.1 where the bit is defined.

SuggestedRemedy

Bring 45.2.1.110.1 in to the draft change the name and make other changes as appropriate.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Implement this remedy in 45.2.1.110.1.

Apply same changes to 108.6.3, 108.7.3, Table 108-1, 30.5.1.1.2, 30.5.1.1.16.

Cl **108** *SC* **108.2** *P* **44** *L* **47** # 20

Slavick, Jeff Broadcom

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

There are more than one RS-FEC available in the IEEE standard. So stating that 108.2 defines the service interface for "the RS-FEC sublayer" is wholely accurate.

SuggestedRemedy

Make the first sentence of 108.2 read as follows "This subclause specifies the services provided by the 10GBASE-R and 25GBASE-R RS-FEC sublayer."

Response *Response Status* **C**

ACCEPT.

Cl **108** *SC* **108.2** *P* **44** *L* **51** # 22

Slavick, Jeff Broadcom

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

10GBASE-R and 25GBASE-R are PCS blocks.

SuggestedRemedy

Add the word PHYs after both 10GBASE-R and 25GBASE-R to the second sentence of the second paragraph of 108.2. And in the 3 paragraph of 108.2

Response *Response Status* **C**

ACCEPT.

Cl **108** *SC* **108.2** *P* **44** *L* **52** # 23

Slavick, Jeff Broadcom

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

The last two sentences of the 2nd paragraph don't provide any additional information.

SuggestedRemedy

Remove them.

Response *Response Status* **C**

ACCEPT.

Cl **108** *SC* **108.2** *P* **45** *L* **6** # 24

Slavick, Jeff Broadcom

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

The orignal text for this section explicitly calls out only the C2C link as a viable AUI extensions.

SuggestedRemedy

Change the 4th paragraph to be "The PCS may be connected to the 10GBASE-R and 25GBASE-R FEC using an optional physical instantiation of the PMA service interface (see Clause 51 and Annex 109A), in which case a PMA is the client of the FEC service interface.

Response *Response Status* **C**

ACCEPT.

Cl **108** *SC* **108.2.1** *P* **46** *L* **7** # 25

Slavick, Jeff Broadcom

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

While the sub-heading implies this is for 10G operations, make it clearly stated.

SuggestedRemedy

Add "for 10GBASE-R PHYs" after the word interface of the first sentence of 108.2.1

Response *Response Status* **C**

ACCEPT.

Cl **108** *SC* **108.2** *P* **46** *L* **14** # 8

Dawe, Piers Nvidia

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

Energy detect and deep sleep? 78 e.g. 78.1.3.3.1 and 108.1.3.2 and 108.2, and note b to Table 78-1

SuggestedRemedy

Should not apply for 10GBASE-BR20, so not needed for 10G RS-FEC. Remove.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

In 108.2.1, remove "f)FEC_ENERGY.indication(energy_detect)", remove "and energy_detect that indicates whether the PMD sublayer has detected a signal at the receiver", remove subcaluse 108.2.1.4 FEC_ENERGY.indication (optional), remove references to this item and subcaluse 108.2.4.1. Adjust the bullet and subcaluse numbers.

Cl **108** *SC* **108.2.2** *P* **49** *L* **9** # 21

Slavick, Jeff Broadcom

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

This is a 10GBASE-R and 25GBASE-R RS-FEC sub clause, there is no longer a 25GBASE-R RS-FEC. So the service interface definition is based upon the usage case.

SuggestedRemedy

Change "The 25GBASE-R FEC" to "For 25GBASE-R PHYs the FEC" in the first sentence of the first paragraph.
Remove 25GBASE-R from the 3rd and 4th paragraphs.

Response *Response Status* **C**

ACCEPT.

Cl **108** *SC* **108.3** *P* **50** *L* **4** # 26

Slavick, Jeff Broadcom

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

Thisi is the 10G and 25G RS-FEC sublayer there is not a 10G and a 25G one.

SuggestedRemedy

Change the editors note for 108.3 to be "Change 108.3 as follows:" and make the contents of 108.3 be "For 10GBASE-R PHYs the 10GBASE-R and 25GBASE-R RS-FEC sublayer is a client of the 10GBASE-R PMA subylayer defined in Clause 51. For 25GBASE-R PHYs the 10GBASE-R and 25GBASE-R RS-FEC sublayer is a client of the 25GBASE-R PMA sublayer defined in Clause 109."

Response *Response Status* **C**

ACCEPT.

Cl **108** *SC* **108.4** *P* **50** *L* **11** # 19

Slavick, Jeff Broadcom

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

Clause 108 is 10GBASE-R and 25GBASE-R RS-FEC sublauyer, there is no 10GBASE-R RS-FEC sublayer.

SuggestedRemedy

Remove the new paragraph that has been added. Bring in the original paragraph from 108.4 and change "25GBASE-R" to "10GBASE-R and 25GBASE-R", delete the "or 983.04ns" and change "105.5" to "44.3 and 105.5"

Response *Response Status* **C**

ACCEPT.

Cl **108** *SC* **108.5** *P* **50** *L* **20** # 18

Marris, Arthur Cadence Design Systems

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

There needs to be a description of the reverse gearbox function and of transmit bit ordering for 10GBASE-R

SuggestedRemedy

Please insert the equivalent of 74.7.4.1.1 and Figure 74-6 from the base standard

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Insert a new subclause 108.5.1.1 (Reverse gearbox function for 10GBASE-R), use the same content in 74.7.4.1.1.

In Figure 108-3 (Transmit bit ordering), add a function block with tx_data-group<0> to tx_data-group<15> after Serialization to show reverse gearbox and bit ordering of 10G.

In Figure 108-4 (Receive bit ordering), add a function block with tx_data-group<0> to tx_data-group<15> before Serialization to show reverse gearbox and bit ordering of 10G.

Cl **108** *SC* **108.5.4.2** *P* **52** *L* **29** # 9

Dawe, Piers Nvidia

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

Text is compressed (at least in the diff version)

SuggestedRemedy

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This uses the VatiableList style. Check to make sure it indents correctly.

Cl **108** *SC* **108.6.3** *P* **53** *L* **1** # 10

Dawe, Piers Nvidia

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

Should RS-FEC Enable be mandatory for these PHYs? 802.3by introduced it, 802.3cc didn't modify it.

SuggestedRemedy

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change Note b of Table 158-1 as "The option to bypass the Clause 108 RS-FEC correction function is not supported (see 108.6.3)."

Cl **108** *SC* **108.7.4.2** *P* **55** *L* **9** # 31

Anslow, Pete Independent

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

For item RF3 the status "BEC*(SR or LR or ER):M" should be "BEC*(SR or LR or ER or BR20):M"

SuggestedRemedy

Response *Response Status* **C**

ACCEPT.

Cl **157** *SC* **157.1.4** *P* **59** *L* **6** # 11

Dawe, Piers Nvidia

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

In tables 157-3, 4 and 5

SuggestedRemedy

Add "PMD" after PMD type name in the three right-most sub-columns.

Response *Response Status* **C**

ACCEPT.

Cl **158** *SC* **158.1.1** *P* **63** *L* **43** # 12

Dawe, Piers Nvidia

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

BER with and without FEC

SuggestedRemedy

Text needs to be changed so that it is clear that the limit for 10GBASE-BR10 and 10GBASE-BR40 is 1e-12, and for 10GBASE-BR20 it's 5e-5 provided that...
"When FEC is implemented" is not right: FEC is used or not according to PHY type, withot any option.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change first setence of 158.1.1 into "For 10GBASE-BR10 and 10GBASE-BR40 PMDs, the bit error ratio (BER) shall be less than 10^–12."

Change second setence of 158.1.1 into "For 10GBASE-BR20 PMD, the BER shall be less than 5 × 10^–5 provided that the error statistics are sufficiently random …"

Cl **158** *SC* **158.6.1** *P* **68** *L* **41** # 13

Dawe, Piers Nvidia

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

Please make it easier to find TDP in the table

SuggestedRemedy

Change "Transmitter and dispersion penalty (max)" to "Transmitter and dispersion penalty (TDP) (max)", as in Table 159-6.

Response *Response Status* **C**

ACCEPT.

Cl **158** *SC* **158.6.2** *P* **69** *L* **33** # 7

Dawe, Piers Nvidia

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

A 10GBASE-BR20 transmitter may transmit -8 dBm with 2 dB TDP. The loss may be 15 dB, and there is another 1 dB in the budget for other penalties. So the receiver may see -23 dB with 3 dB of penalties after FEC. The SRS condition is -22.7 dB with 2.7 dB of VECP. As the response to D2.1 comment 37 says "Tests for 10GBASE-R are more conservative than SEC": VECP (designed for 1e-12 PMDs) is more conservative than SEC (designed for 5e-5 PMDs), so the stressed signal when measured with VECP is better than when measured with the same number of dB of SEC, so the receiver is under-stressed and, contrary to the conclusion in that response, the link is not shown to close. There is a gap in the budget.

SuggestedRemedy

If the method of creating the stress is very tightly defined, one might be able to get correlation between VECP and SEC, but it would be hard work for no significant benefit. For 10GBASE-BR20, change from a VECP calibration to an SEC-based method following Clause 114 or 159.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add SEC-based spec of 10GBASE-BR20 to Table 158-7: cross out VECP-based spec for 10GBASE-BR20, add conditions of stressed receiver sensitivity test (Stressed eye closure, Stressed eye J2 jitter, and Stressed eye J4 jitter) to specify BR20, use same values from Table 159-7.

Cl **158** *SC* **158.8.1.1** *P* **71** *L* **13** # 2

Dawe, Piers Nvidia

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

10GBASE-W?

SuggestedRemedy

Either add 10GBASE-W variants of these PMDs or delete the right-most column of Table 158-10, Test patterns, including note b.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Delete column "10GBASE-W" in Table 158-10.

Cl **158** *SC* **158.8.2** *P* **71** *L* **38** # 1

Dawe, Piers Nvidia

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

"the test pattern defined in Table 158-11": but the test patterns definitions are in Table 158-10. They are identified, listed, specified or given in Table 158-11. Section 8 uses a mixture of "defined" (old way) and "specified" (new way).

SuggestedRemedy

Change "defined" to "specified" here, in 158.8.3, 158.8.4 and 158.8.7. Similarly in 159 and 160.

Response *Response Status* **C**

REJECT.

In recent clauses (121, 139, ...) both "defined" and "specified" are used. No need to change the wording here because both words mean the same thing.

Cl **158** *SC* **158.8.1** *P* **72** *L* **6** # 3

Dawe, Piers Nvidia

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

Table layout

SuggestedRemedy

Make the table wider so that each entry fits in one row, like tables 159-9 and 160-10

Response *Response Status* **C**

ACCEPT.

Cl **158** *SC* **158.8.6** *P* **72** *L* **39** # 15

Dawe, Piers Nvidia

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

If there is only one entry in a list, we don't need a list

SuggestedRemedy

Change
"with the following exception:
a) The optical return loss shall be"
to "with the exception that the optical return loss shall be"

Response *Response Status* **C**

ACCEPT.

Cl **158** *SC* **158.8.7** *P* **72** *L* **48** # 16

Dawe, Piers Nvidia

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

corner bandwidth and filter nominal reference frequency fr are wrong for 10 Gb/s.

SuggestedRemedy

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Use content in 87.8.9 to replace 158.8.7 as "The required optical transmitter pulse shape characteristics are specified in the form of a mask of the transmitter eye diagram as shown in Figure 86–4. The transmitter optical waveform of a port transmitting the test pattern specified in Table 87–11 shall meet specifications according to the methods specified in 86.8.4.6.1 with the filter nominal reference frequency fr of 7.5 GHz and filter tolerances as specified for STM-64 in ITU-T G.691. Compensation may be made for variation of the reference receiver filter response from an ideal fourth-order Bessel-Thomson response."

Cl **158** *SC* **158.8.9** *P* **73** *L* **33** # 17

Dawe, Piers Nvidia

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

The amount of applied sinusoidal jitter in Table 158-12 is wrong for 10 Gb/s.

SuggestedRemedy

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Current content in 158.8.9 is for 10GABSE-BR20. BR20 is different from BR10 and BR40.

Make 158.8.9 to contain two subclauses:
158.8.9.1 Stressed receiver sensitivity for 10GBASE-BR10 and 10GBASE-BR40. This subclause reuses content from 52.9.9 and should be in the new style as Cl.159/160.
158.8.9.2 Stressed received sensitivity for 10GBASE-BR20. This subcaluse resues content in D2.2 158.8.9.

Table 158–12 (Applied sinusoidal jitter) shoule be updated as Table 87–13 to include correct 10G parameters.

Cl **160** *SC* **160.6.1** *P* **113** *L* **28** # 14

Dawe, Piers Nvidia

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

It is very unwise to delete the limit on K = 10log10(Ceq), and also unwise to to add the over/under-shoot and transmitter power excursion (max) limits (see the latest P802.3cu draft). These three limits protect the receiver from different stressful signals that the ideal reference receiver with infinite resolution and perfect linearity reports have acceptable TDECQ, but real receivers designed to realistic cost and power objectives struggle with.

SuggestedRemedy

Reinstate the limit on K = 10log10(Ceq).
Add over/under-shoot and transmitter power excursion (max) limits as in the latest P802.3cu draft.

Response *Response Status* **U**

REJECT.

For the first suggested remedy of "Reinstate the limit on K = 10log10(Ceq)", cp follows the removal of “K = 10log10(Ceq)” in P802.3cu. The latest decision from P802.3cu supports removal of K. In the case it will be necessary to include full refererences:
•In P802.3cu resolution to comment #2 to D1.1 it was agreed to remove K = 10log10(Ceq) and replace with several other parameters like TECQ and TDECQ – TECQ.
•In P802.3cu resolution to comment #87 to D2.0, a proposal to reinstate K = 10log10(Ceq) was rejected.
•In P802.3cu resolution to comment #30 to D2.1, another proposal to reinstate K = 10log10(Ceq) was rejected, referring to comment #87 to D2.0.

For the second suggested remedy of “Add over/under-shoot and transmitter power excursion (max) limits as in the latest P802.3cu draft”, the commenter has not provided any evidence that these requirements are necessary for 50 Gb/s PAM4 applications and that adding those would increase the quality of the draft.

Cl **160** *SC* **160.7.4** *P* **118** *L* **25** # 4

Dawe, Piers Nvidia

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

Too much duplication

SuggestedRemedy

Refer to other clauses, for several subclauses here

Response *Response Status* **U**

REJECT.

This is the same as D2.1 Comment #44.

This material is included in Clause 139. It follows the recent style of the subclause of definition of optical parameters and measurement methods.