Cl **121** *SC* **121.7.1** *P* **29** *L* **40** # 1

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

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

Footnote "c" in 802.3-2018 has changed to "d" and isn't marked as a change

Same comment applies to Table 122-9 on page 43 and footnote "e" on Table 122-10, page 44

SuggestedRemedy

Mark "d" as changed from "c" (strikeout & underscore). Change is both on line 40 and 45

Same change on Page 43, lines 44 & 49

Mark "e" as changed from "d" (strikeout & underscore). Change is both P 44 L50 and P45 L4

Response *Response Status* **C**

REJECT.
This has not been done in any recently published amendment to IEEE 802.3. For example, see IEEE Std 802.3bk-2013, Table 60-1 and Table 60-9, IEEE Std 802.3bm-2015, Table 87-9, and IEEE Std 802.3cd-2018, Table 80-7.

Cl **121** *SC* **121.8.6a** *P* **32** *L* **47** # 2

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

Comment Type **T** *Comment Status* **R**

Sentence combines test fixture and definition in a way that doesn't make sense. Fortunately, the test fixture is described in 121.8.5.1 TDECQ conformance test setup.
"Transmitter transition time is defined as the slower of the time interval of the transition from 20% of
OMAouter to 80% of OMAouter, or from 80% of OMAouter to 20% of OMAouter, for the rising and falling
edges respectively, as measured through an O/E converter and oscilloscope with a combined 3 dB
bandwidth of approximately 13.28125 GHz with a fourth-order Bessel-Thomson response to at least
1.5 × 26.5625 GHz and at frequencies above 1.5 × 26.5625 GHz the response should not exceed -24 dB.
Compensation may be made for any deviation from an ideal fourth-order Bessel-Thomson response."

Same comment applies to P51 L23: 122.8.6.a 2nd paragraph

SuggestedRemedy

Break up to read: "Transmitter transition time is defined as the slower of the time interval of the transition from 20% of OMAouter to 80% of OMAouter, or from 80% of OMAouter to 20% of OMAouter, for the rising and falling
edges respectively, as measured through the test setup specified in 121.8.5.1 TDECQ conformance test setup."

Same change on 122.8.6.a, referencing 122.8.5.1 instead of 121.8.5.1

Response *Response Status* **C**

REJECT.
The test setup specified in 121.8.5.1 is that shown in Figure 121-4 and contains a back reflector and dispersive fiber. This is quite different from the arrangement appropriate to measuring transmitter transition time.
Also, the noted text in 121.8.6a and 122.8.6a is the same as that in 138.8.7, 139.7.7, and 140.7.7 contained in the published amendment IEEE Std 802.3cd-2018.

Cl **122** *SC* **122.7.1** *P* **43** *L* **16** # 3

Lewis, David — Lumentum

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

In Table 122-9 the values for 200GBASE-ER4 Average launch power, each lane (max) and Total average launch power (max)are specified to 1/100 dB precision. This is unecessarily tight. Other PMDs in this clause specify these parameters to 1/10 dB precision.

SuggestedRemedy

Change the value of Average launch power, each lane (max) from 6.63 to 6.6.
Change the value of Total average launch power (max) from 12.63 to 12.6.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See resolution to comment #13

Cl **122** *SC* **122.7.1** *P* **44** *L* **19** # 4

Lewis, David — Lumentum

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

In Table 122-10 the value for Average launch power, each lane (min) for 400GBASE-ER8 is 2.5 dB below the value for OMAouter, each lane (min). This is different to other PMDs in this clause where the differential is set to 3 dB. The 2.5 dB is based on a maximum ER of about 12 dB, which seems unecessary.

SuggestedRemedy

Change the value of Average launch power, each lane (min) from -0.1 to -0.6.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
In Table 122-10 for 400GBASE-ER8:
Change the value of Average launch power, each lane (min) from -0.1 to -0.6

In Table 122-12 for 400GBASE-ER8:
Change the value of Average receive power, each lane (min) from -18.1 to -18.6

If the changes proposed in Comment #12 are accepted:
In Table 122-21, change the 400GBASE-FR8 transmitter to 400GBASE-ER8 receiver "Max loss" from 14.6 to 15.1 dB
In Table 122-22, change the 400GBASE-LR8 transmitter to 400GBASE-ER8 receiver "Max loss" from 15.3 to 15.8 dB

Cl **122** *SC* **122.7.1** *P* **44** *L* **21** # 5

Lewis, David — Lumentum

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

In Table 122-10 the value for Total average launch power (max) for 400GBASE-ER8 is 9.1 dB higher than the value for Average launch power, each lane (max). This is 0.1 dB higher than needed and does not follow the values for 400GBASE-FR8 and 400GBASE-LR8 in the same table, which both have a difference of 7.9 dB for some reason.

SuggestedRemedy

Change the value for Total average launch power (max) from 14.7 to 14.6.

Response *Response Status* **C**

ACCEPT.

Cl **122** *SC* **122.7.2** *P* **45** *L* **32** # 6

Lewis, David — Lumentum

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

In Table 122-11 the values for 200GBASE-ER4 Damage threshold, each lane and Average receiver power, each lane (max) are unecessarily precise. These parameters are specified to a precision of 0.1 dB elsewhere.

SuggestedRemedy

Change Damage threshold, each lane from -2.37 to -2.4.
Change Average receive power, each lane (max) from -3.37 to -3.4.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See resolution to comment #13

Cl **122** *SC* **122.8.8** *P* **52** *L* **4** # 7

Lewis, David — Lumentum

Comment Type **E** *Comment Status* **D** *Bucket*

The units for equations 122-1, 122-2 and 122-3 should be dBm.

SuggestedRemedy

Change (dB) to (dBm) in 3 places.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **122** *SC* **122.8.8** *P* **52** *L* **52** # 8

Lewis, David — Lumentum

Comment Type **E** *Comment Status* **D** *Bucket*

The units for equations 122-4, 122-5 and 122-6 should be dBm.

SuggestedRemedy

Change (dB) to (dBm) in 3 places.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **122** *SC* **122.11.1** *P* **56** *L* **27** # 9

Lewis, David — Lumentum

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

Note b to Table 122-18 says "may not support operation 10 km for..." which would be better as "may not support operation up to 10 km for....".

SuggestedRemedy

Add the words "up to" between operation and 10 km. Also on the same line, add the words "up to" between or and 40 km.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Change the wording in Note b to Table 122-18 to ". may not support operation at 10 km .", by adding the word "at" in underline font between "operation" and "10 km", which is identical to the wording used in Table 88-15 in in-force Subclause 88.11.1

Cl **139** *SC* **139.6.1** *P* **71** *L* **40** # 10

Lewis, David — Lumentum

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

The value for Average launch power (max) for 50GBASE-ER is over precise. As for other similar parameters in this clause, the value should be rounded to 1 decimal place.

SuggestedRemedy

Change Average launch power (max) from 6.63 to 6.6 dB for 50GBASE-ER.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See resolution to comment #15

Cl **139** *SC* **139.6.2** *P* **72** *L* **41** # 11

Lewis, David — Lumentum

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

In Table 139-7 the values for Damage threshold and Average receive power (max) for 50GBASE-ER are given with 2 decimal places. A precision of 1 decimal place is sufficient.

SuggestedRemedy

Change Damage threshold from -2.37 to -2.4 for 50GBASE-ER.
Change Average receive power (max) from -3.37 to -3.4 for 50GBASE-ER.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See resolution to comment #15

Cl **122** *SC* **122.7** *P* **41** *L* **47** # 12

Anslow, Pete — Ciena

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

Subclause 122.7 contains interoperability requirements between 400GBASE-FR8 and 400GBASE-LR8, but does not contain interoperability requirements between 200GBASE-ER4 and 200GBASE-LR4 or between 400GBASE-ER8 and the other two 400G PMDs. Similarly, subclause 139.6 contains interoperability requirements between 50GBASE-FR and 50GBASE-LR but does not contain interoperability requirements between 50GBASE-ER and the other two 50G PMDs.
The attached presentation (anslow_3cn_01_0519) provides information on the interoperability requirements and contains a proposal for how to modify the draft to address this issue.

SuggestedRemedy

Apply the changes proposed on pages 8 to 14 of the attached presentation (anslow_3cn_01_0519)

Response *Response Status* **C**

ACCEPT.

Cl **122** *SC* **122.7.1** *P* **43** *L* **15** # 13

Anslow, Pete Ciena

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

IEEE transmitter specifications generally specify powers derived form other values to the nearest 0.1 dB.
This has been done for 400GBASE-ER8 but not for 200GBASE-ER4
The OMAouter, each lane (max) value for 200GBASE-ER4 is 7.4 dBm.
With the worst case ER of 6 dB this is a calculated maximum average power of 6.6295 dBm. This should be rounded to 6.6 dBm.
If all four lanes are at a maximum power of 6.6 dBm, the maximum total average launch power calculates as 12.62 dBm. This should be rounded to 12.6 dBm.
Making these changes also affects the "Average receive power, each lane (max)" and the "Damage threshold, each lane" for 200GBASE-ER4.

SuggestedRemedy

In Table 122-9 for 200GBASE-ER4:
Change the "Average launch power, each lane (max)" from 6.63 to 6.6 dBm
Change the "Total average launch power (max)" from 12.63 to 12.6 dBm

In Table 122-11 for 200GBASE-ER4:
Change the "Average receive power, each lane (max)" from -3.37 to -3.4 dBm
Change the "Damage threshold, each lane" from -2.37 to -2.4 dBm

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **122** *SC* **122.7.2** *P* **45** *L* **45** # 14

Anslow, Pete Ciena

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

The list of changes to the "existing 200 Gb/s and 400 Gb/s physical medium dependent sublayers over single-mode fiber" listed in:
http://www.ieee802.org/3/cn/public/19_01/anslow_3cn_01_0119.pdf#page=3 included:
"For all PMDs except 400GBASE-DR4, reduce the target SECQ and the stressed receiver sensitivity (max) by 0.2 dB"
This was done for 200GBASE-DR4 in Table 121-7, but for 200GBASE-FR4 and 200GBASE-LR4 in Table 122-11 as well as 400GBASE-FR8 and 400GBASE-LR8 in Table 122-12 the Stressed receiver sensitivity has not been changed. Because the "OMAouter of each aggressor lane" is derived from the Stressed receiver sensitivity, these values should be changed also.

SuggestedRemedy

In Table 122-11:
Change the "Stressed receiver sensitivity (OMAouter), each lane (max)" for 200GBASE-FR4 from -3.6 to -3.8 dBm
Change the "Stressed receiver sensitivity (OMAouter), each lane (max)" for 200GBASE-LR4 from -5.2 to -5.4 dBm
Change the "OMAouter of each aggressor lane" for 200GBASE-FR4 from 0.5 to 0.3 dBm
Change the "OMAouter of each aggressor lane" for 200GBASE-LR4 from -1 to -1.2 dBm

In Table 122-12:
Change the "Stressed receiver sensitivity (OMAouter), each lane (max)" for 400GBASE-FR8 from -3.1 to -3.3 dBm
Change the "Stressed receiver sensitivity (OMAouter), each lane (max)" for 400GBASE-LR8 from -4.7 to -4.9 dBm
Change the "OMAouter of each aggressor lane" for 400GBASE-FR8 from 1 to 0.8 dBm
Change the "OMAouter of each aggressor lane" for 400GBASE-LR8 from -0.2 to -0.4 dBm

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **139** *SC* **139.6.1** *P* **71** *L* **40** # 15

Anslow, Pete Ciena

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

IEEE transmitter specifications generally specify powers derived form other values to the nearest 0.1 dB.
This has been done for 400GBASE-ER8 but not for 50GBASE-ER
The OMAouter (max) value for 50GBASE-ER is 7.4 dBm.
With the worst case ER of 6 dB this is a calculated maximum average power of 6.6295 dBm. This should be rounded to 6.6 dBm.
Making this change also affects the "Average receive power (max)" and the "Damage threshold" for 50GBASE-ER.

SuggestedRemedy

In Table 139-6 for 50GBASE-ER:
Change the "Average launch power (max)" from 6.63 to 6.6 dBm

In Table 139-7 for 50GBASE-ER:
Change the "Average receive power (max)" from -3.37 to -3.4 dBm
Change the "Damage threshold" from -2.37 to -2.4 dBm

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **122** *SC* **122.7** *P* **42** *L* **17** # 16

Ferretti, Vince Corning

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

IEC 60793-2-50 2018 has updated single-mode fiber naming convention to be more in line with ITU-T

SuggestedRemedy

In Table 122.8 notes, Change "type B1.1, type B1.3, or type B6_a single-mode fiber." to "type B-652.B, type B-652.D or type B-657"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Final response pending availability of IEC 60793-2-50 2018

Cl **122** *SC* **122.7.3** *P* **47** *L* **42** # 17

Ferretti, Vince Corning

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

IEC 60793-2-50 2018 has updated single-mode fiber naming convention to be more in line with ITU-T

SuggestedRemedy

In Table 122.13 notes, Change "type B1.1, type B1.3, or type B6_a single-mode fiber." to "type B-652.B, type B-652.D or type B-657"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Pending availability of IEC 60793-2-50 2018

Cl **139** *SC* **139.6** *P* **71** *L* **16** # 18

Ferretti, Vince Corning

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

IEC 60793-2-50 2018 has updated single-mode fiber naming convention to be more in line with ITU-T

SuggestedRemedy

In Table 139.5 notes, Change "type B1.1, type B1.3, or type B6_a single-mode fiber." to "type B-652.B, type B-652.D or type B-657"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Final response pending availability of IEC 60793-2-50 2018

Cl **139** *SC* **139.6.3** *P* **73** *L* **42** # 19

Ferretti, Vince Corning

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

IEC 60793-2-50 2018 has updated single-mode fiber naming convention to be more in line with ITU-T

SuggestedRemedy

In Table 139.8 notes, Change "type B1.1, type B1.3, or type B6_a single-mode fiber." to "type B-652.B, type B-652.D or type B-657"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Final response pending availability of IEC 60793-2-50 2018

Cl **124** *SC* **124.9** *P* **64** *L* **19** # 20

Anslow, Pete — Ciena

Comment Type **E** *Comment Status* **D** *Bucket*

The PICS heading in Clause 124 is 124.11 not 124.9

SuggestedRemedy

Change the heading numbering for the Clause 124 PICS to be 124.11, 124.11.4, and 124.11.4.4 for the 3 PICS headings on page 64

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Change the heading numbering for the Clause 124 PICS to be 124.12, 124.12.4, and 124.12.4.4 for the 3 PICS headings on page 64.

Cl **00** *SC* **0** *P* **2** *L* **6** # 21

Kabra, Lokesh — Synopsys

Comment Type **E** *Comment Status* **D** *Bucket*

"sin-gle-mode"

SuggestedRemedy

Change "sin-gle-mode" to "single-mode"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
[Editor's note: Page changed from 1 to 2]

Stop "single-mode" from breaking across two lines.

Cl **00** *SC* **0** *P* **12** *L* **3** # 22

Kabra, Lokesh — Synopsys

Comment Type **E** *Comment Status* **D** *Bucket*

Does not mention new clause added in 802.3cm as described in previous references

SuggestedRemedy

Change "Std 802.3-2018 and adds Physical" to "Std 802.3-2018 and adds Clause 150. This amendment adds Physical"

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The text for the summary of IEEE Std 802.3cm-20xx in the P802.3cn draft is taken from the most recent version (D2.0) of the P802.3cm draft.
Comments to make changes to this text should be submitted against the P802.3cm draft.

Cl **122** *SC* **122.12.4.4a** *P* **59** *L* **22** # 23

Marris, Arthur — Cadence Design Systems

Comment Type **E** *Comment Status* **D** *Bucket*

Inserted text should not be underlined

SuggestedRemedy

Remove underling on ERF1 and ERF2 items.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **139** *SC* **139.1** *P* **17** *L* **68** # 24

Maguire, Valerie — The Siemon Company

Comment Type **E** *Comment Status* **D** *Bucket*

Extraneous comma.

SuggestedRemedy

Replace, "Clause 45, or equivalent" with "Clause 45 or equivalent" using revision marks to show the comma in strikethrough.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
This comma is present in several in-force Clauses, not under review in this Task Force, for example Clauses 85, 86, 87 and 88.

Cl **FM** *SC* **FM** *P* **10** *L* **5** # 25

Maguire, Valerie — The Siemon Company

Comment Type **E** *Comment Status* **D** *Bucket*

Extra space.

SuggestedRemedy

Replace, "over Single- Mode Fiber" with "over Single-Mode Fiber".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
[Editor's note: Subclause changed from "Front Matter" to "FM"]

Draft D2.0 does not contain a space in "Single-Mode".
Replace the hyphen with a non-breaking hyphen so that "Single-Mode" does not break across two lines.

Cl **116** *SC* **116.1.3** *P* **26** *L* **28** # 26

Maguire, Valerie — The Siemon Company

Comment Type **E** *Comment Status* **D** *Bucket*

A hypen in "single-mode" appears to be present because the word splits across two lines, but "singlemode" is what's actually used in the sentence.

SuggestedRemedy

Replace "singlemode" with "single-mode".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The text in the draft is "single-mode".
Replace the hyphen with a non-breaking hyphen so that "single-mode" does not break across two lines.

Cl **FM** *SC* **FM** *P* **7** *L* **20** # 27

Grow, Robert — RMG Consulting

Comment Type **E** *Comment Status* **D** *Bucket*

The WG ballot list is now known, though some may qualify for listing during recirculations.

SuggestedRemedy

Add list prior to Sponsor ballot

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
The list of Working Group ballot voters is defined by the IEEE 802.3 Ethernet Working Group Operations Manual (OM): "The WG balloting group consists of all voting members of the WG as of the close of day the ballot package distribution was completed as determined by the WG Chair."

Add the list of Working Group ballot voters to the draft.

Cl **FM** *SC* **FM** *P* **8** *L* **1** # 28

Grow, Robert — RMG Consulting

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

This template language is not consistent with current governance document terminology.

SuggestedRemedy

Please recommend to IEEE editorial staff to update the template language: "The following individuals participated the Standards Committee ballot on this standard. Balloters may have voted for approval, disapproval, or abstention." For entity ballots I would recommend "The following entity representatives participated in the Standards Committee ballot on this standard. Balloters may have voted for approval, disapproval, or abstention." (Unless it should simply say "entities" rather than "entity representatives".)

Response *Response Status* **C**

REJECT.
The commenter has not requested any change to the draft but is asking for an action that is outside the scope of the ballot resolution committee.

The text at the top of page 8 regarding Standards Association ballot (formerly known as Sponsor ballot) follows the example text in the latest version of the IEEE-SA Standards Style Manual. It is also consistent with recently published amendments to IEEE Std 802.3. If a new version of the IEEE-SA Standards Style Manual is generated with alternative text, then the draft will be updated to match.

Cl **122** *SC* **122.7.1** *P* **43** *L* # 29

John, DeAndrea — Finisar

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

Table 122-9, Row 4, Column 4, Total average launch power.
Specifyingo 1/100 decimal place iimpractical.

SuggestedRemedy

Suggest changing 12.63 to 12.6

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See resolution to comment #13

Cl **122** *SC* **122.7.1** *P* **43** *L* # 30

John, DeAndrea Finisar

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

Table 122-9, Row 5, Column 4, Average launch power, each lane, 6.63
Specifyin to 1/100 decimal place is impractical.

SuggestedRemedy

Suggest changing 6.63 to 6.6

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See resolution to comment #13

Cl **122** *SC* **122.7.2** *P* **45** *L* # 31

John, DeAndrea Finisar

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

Table 122-11, Row 4, Coulumn 3, Damage threshold, each lane, -2.37
Specifying to 1/100 decimal place iimpractical.

SuggestedRemedy

Suggest changing -2.37 to -2.4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See resolution to comment #13

Cl **122** *SC* **122.7.2** *P* **45** *L* # 32

John, DeAndrea Finisar

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

Table 122-11, Row 4, Coulumn 4, Damage threshold, each lane, -3.37
Specifying to 1/100 decimal place ie iimpractical.

SuggestedRemedy

Suggest changing -3.37 to -3.4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See resolution to comment #13

Cl **122** *SC* **122.7.1 table 122-9** *P* **43** *L* **30** # 33

Chang, Frank Source Photonics

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

D2.0 has applied a 0.2dB reduction in TDECQ max value to WDM MUX based 200G-DR4/FR4/LR4 and 400G FR8/LR8. Our understanding during P802.3cd discussion, the consencus was focused on reducing by 0.2dB for 50G-FR/LR for non-WDM based PMDs non-WDM based PMDs by adding threshold adjust. While TDECQ max of 3.4dB was somewhat arbitrary values which has not been fully proved, so my suggest we should leave the TDECQ values unchanged for WDM MUX based PMDs including 200G-FR4/LR4 and 400G FR8/LR8. We will follow up with presenation slides.

SuggestedRemedy

change TDECQ and TDECQ-10log(Ceq) to 3.3 from 3.1 for 200G-FR4; and to 3.4 from 3.1 for 200G-LR4.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
See resolution to comment #34

Cl **122** *SC* **122.7.1 table 122-10** *P* **44** *L* **35** # 34

Chang, Frank Source Photonics

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

D2.0 has applied a 0.2dB reduction in TDECQ max value to WDM MUX based 200G-DR4/FR4/LR4 and 400G FR8/LR8. Our understanding during P802.3cd discussion, the consencus was focused on reducing by 0.2dB for 50G-FR/LR for non-WDM based PMDs by adding threshold adjust. While TDECQ max of 3.3-3.4dB was somewhat arbitrary values which has not been fully proved, so my suggest we should leave the TDECQ values unchanged for WDM MUX based PMDs including 200G-FR4/LR4 and 400G FR8/LR8. We will follow up with presenation slides.

SuggestedRemedy

change TDECQ and TDECQ-10log(Ceq) to 3.1 from 2.9 for 400G-FR8; and to 3.3 from 3.1 for 400G-LR8.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The presentation http://www.ieee802.org/3/cn/public/adhoc/19_0509/chang_3cn_01_190509.pdf was reviewed in the P802.3cn Ad Hoc call on 9 May 2019.
The reduction of 0.2 dB in TDECQ values adopted during the P802.3cd project was a result of the introduction of adjustable thresholds in the TDECQ method. This reduction of 0.2 dB was a compromise value between an anticipated reduction of 0.4 dB in TDECQ achievable for very asymmetric PAM4 eye diagrams and zero reduction for very symmetric PAM4 eye diagrams. In order to not overly penalize a PAM4 transmitter with very symmetric eye diagrams the compromise value of 0.2 dB was adopted. This principle is independent of the presence of WDM muxes and demuxes.

Cl **122** *SC* **122.7.2 table 122-11** *P* **45** *L* **49** # 35

Chang, Frank Source Photonics

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

Same comment as above, SECQ should match TDECQ max change for RX on 200-FR4/LR4

SuggestedRemedy

change SECQ and SECQ-10log(Ceq) to 3.3 from 3.1 for 200G-FR4; and to 3.4 from 3.2 for 200G-LR4.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
See resolution to comment #34

Cl **122** *SC* **122.7.2 table 122-12** *P* **46** *L* **44** # 36

Chang, Frank Source Photonics

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

Same comment as above, SECQ should match TDECQ max change for RX on 200-FR4/LR4

SuggestedRemedy

change SECQ and SECQ-10log(Ceq) to 3.3 from 3.1 for 200G-FR4; and to 3.4 from 3.2 for 200G-LR4.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
See resolution to comment #34

Cl **122** *SC* **122.7.3 table 122-13** *P* **47** *L* **24** # 37

Chang, Frank Source Photonics

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

Same comment as above, SECQ should match TDECQ max change for RX on 200-FR4/LR4

SuggestedRemedy

Simply for the change in Power budget and allocation for penalties by 0.3dB offset.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
See resolution to comment #34

Cl **122** *SC* **122.7.1 table 122-9** *P* **43** *L* **26** # 38

Chang, Frank Source Photonics

Comment Type **T** *Comment Status* **R**

Current 100G ER4 deployment in practice use ER lite to guarantee 30km over any deployment fibers and 40km is considered as engineered link, e.g. not guaranteed for worst case deployment fiber from insertion loss perspective. In order to upgrade from 100G-ER4 to 200G-ER4 and 400G-ER8 cost-effectively, we would suggest to also add the 200G-ER4 lite and 400G-ER8 lite catagory (or sub-column). 200G-ER4 lite and 400G-ER8 lite still use the 15dB insertion loss as max. The 3dB extra budget split into two part: allocated 2dB to reduce TxOMA min and 1dB to relax RxOMA max. We will follow up with presenation slides.

SuggestedRemedy

Add 200G-ER4 lite category (or sub-column). Allocate 2dB extra budget to Tx side. Chang TxOMA min from 3.4 to 1.4dB, and change TxOMA-TDECQmin from 2 to 0dBm.

Response *Response Status* **C**

REJECT.
See resolution to comment #39

Cl **122** *SC* **122.7.1 table 122-10** *P* **44** *L* **26** # 39

Chang, Frank — Source Photonics

Comment Type **T** *Comment Status* **R**

Current 100G ER4 deployment in practice use ER lite to guarantee 30km over any deployment fibers and 40km is considered as engineered link, e.g. not guaranteed for worst case deployment fiber from insertion loss perspective. In order to upgrade from 100G-ER4 to 200G-ER4 and 400G-ER8 cost-effectively, we would suggest to also add the 200G-ER4 lite and 400G-ER8 lite catagory (or sub-column). 200G-ER4 lite and 400G-ER8 lite still use the 15dB insertion loss as max. The 3dB extra budget split into two part: allocated 2dB to reduce TxOMA min and 1dB to relax RxOMA max. We will follow up with presenation slides.

SuggestedRemedy

Add 400G-ER8 lite category (or sub-column). Allocate 2dB extra budget to Tx side. Chang TxOMA min from 2.4 to 0.4dB, and change TxOMA-TDECQmin from 1 to -1dBm.

Response *Response Status* **C**

REJECT.
The presentation http://www.ieee802.org/3/cn/public/adhoc/19_0509/chang_3cn_02_190509.pdf was reviewed in the P802.3cn Ad Hoc call on 9 May 2019.

100GBASE-ER4 operates over 30 km of fiber with worst case loss per km or over 40 km of fiber with less than worst case loss per km (an "engineered link"). However, the 100GBASE-ER4 PMD is required to operate with a total insertion loss of 18 dB in both cases, so there is no "ER lite" specification in the IEEE 802.3 standard. If it is desired to be able to upgrade from 100GBASE-ER4 to 200GBASE-ER4 or 400GBASE-ER8, then the new PMDs have to support an 18 dB total insertion loss also.
The current draft is explicit in defining the extra 3 dB in the link power budget as "Additional insertion loss allowed" and therefore it cannot be used to reduce the transmitter output power or relax the receiver sensitivity.
The specifications for 200GBASE-ER4 and 400GBASE-ER8 in D2.0 are consistent with the specifications for 100GBASE-ER4 in Clause 88 and 25GBASE-ER in Clause 114 in this respect. If an additional column was added with 3 dB less power budget, then this would be the addition of a new PMD type that is not capable of operation over 40 km of fiber. This would necessitate a modification to the project CSD responses (which are specific to 40 km) and would also be expected to be associated with additional project

Cl **122** *SC* **122.7.2 table 122-11** *P* **45** *L* **42** # 40

Chang, Frank — Source Photonics

Comment Type **T** *Comment Status* **R**

Same comment as above, RX should match TX launching power change on 200-ER4

SuggestedRemedy

Add 200G-ER4 lite category (or sub-column). Allocate 1dB extra budget to Rx side. Relax RxOMA min from -15.1 to -14.1dBm in Eq.122-3, and SRS OMA max from -13.3 to -12.3dBm

Response *Response Status* **C**

REJECT.
See resolution to comment #39

Cl **122** *SC* **122.7.2 table 122-12** *P* **46** *L* **37** # 41

Chang, Frank — Source Photonics

Comment Type **T** *Comment Status* **R**

Same comment as above, RX should match TX launching power change on 400-ER8

SuggestedRemedy

Add 400G-ER8 lite category (or sub-column). Allocate 1dB extra budget to Rx side. Relax RxOMA min from -16.1 to -15.1dB in Eq.122-6, and SRS OMA max from -14.1 to -13.1dBm

Response *Response Status* **C**

REJECT.
See resolution to comment #39

Cl **122** *SC* **122.8.8 Eq 122-3 and Fi** *P* **52** *L* **8** # 42

Chang, Frank — Source Photonics

Comment Type **T** *Comment Status* **R**

Same comment as above, RX should match TX launching power change on 200-ER8

SuggestedRemedy

Add 200G-ER4 lite category. Relax RxOMA min from -15.1 to -14.1dB in Eq.122-3, and in Fig. 122-6

Response *Response Status* **C**

REJECT.
See resolution to comment #39

Cl **122** *SC* **122.8.8 Eq 122-6 and Fi** *P* **53** *L* **3** # 43

Chang, Frank Source Photonics

Comment Type **T** *Comment Status* **R**

Same comment as above, RX should match TX launching power change on 400-ER8

SuggestedRemedy

Add 400G-ER8 lite category. Relax RxOMA min from -16.1 to -15.1dB in Eq.122-3, and in Fig. 122-6

Response *Response Status* **C**

REJECT.
See resolution to comment #39

Cl **122** *SC* **122.7.3 table 122-13** *P* **47** *L* **24** # 44

Chang, Frank Source Photonics

Comment Type **T** *Comment Status* **R**

Same comment as above, RX should match TX launching power change on 200G-ER4 and 400-ER8

SuggestedRemedy

change Power budget (for max. TDECQ) from 21.7 and 21.9 to 18.7 and 18.9dB; Additional insertion loss allowed from 3 to 0dB for 200G-ER4 and 400G-ER8.

Response *Response Status* **C**

REJECT.
See resolution to comment #39

Cl **122** *SC* **122.10 table 122-17** *P* **55** *L* **30** # 45

Chang, Frank Source Photonics

Comment Type **T** *Comment Status* **R**

Same comment as above, RX should match TX launching power change on 200G-ER4 and 400-ER8

SuggestedRemedy

Change channel insertion loss from 18 to 15dB for 30km for 200G-ER4 and 400G-ER8

Response *Response Status* **C**

REJECT.
See resolution to comment #39