

IEEE 802.3db D1.0 100G, 200G, 400G Short Reach Fiber Task Force 1st Task Force review comments

CI **FM** SC **FM** P11 L54 # 11
 Dawe, Piers Nvidia
 Comment Type **E** Comment Status **D** Bucket
 There are more amendments, ahead of this one but not yet published
 SuggestedRemedy
 Add IEEE Std 802.3cp-202x and possibly more
 Proposed Response Response Status **W**
 PROPOSED ACCEPT IN PRINCIPLE.
 Add 802.3cp-202x and others

CI **30** SC **30.5.1.1.2** P7 L14 # 8
 Dawe, Piers Nvidia
 Comment Type **E** Comment Status **D** Bucket
 If ordered by length
 SuggestedRemedy
 Should VR come before SR before 100GBASE-SR4, VR2 before SR2 before 200GBASE-SR4, VR4 before SR4 before 400GBASE-SR16?
 Proposed Response Response Status **W**
 PROPOSED ACCEPT.

CI **00** SC **0** P L # 6
 Anslow, Pete Independent
 Comment Type **ER** Comment Status **D** Bucket
 All external cross-references should be "Forest green" by using the "External" character tag as per the 802.3 FrameMaker template.
 SuggestedRemedy
 Make all external cross-references "Forest green" by applying the "External" character tag as per the 802.3 FrameMaker template.
 Proposed Response Response Status **W**
 PROPOSED ACCEPT.

CI **30** SC **30.5.1.1.2** P7 L25 # 9
 Dawe, Piers Nvidia
 Comment Type **E** Comment Status **D** Bucket
 200GBASE-SR, 200GBASE-VR, 400GBASE-SR, 400GBASE-VR
 SuggestedRemedy
 200GBASE-SR2, 200GBASE-VR2, 400GBASE-SR4, 400GBASE-VR4
 Proposed Response Response Status **W**
 PROPOSED ACCEPT.

CI **00** SC **0** P L # 5
 Anslow, Pete Independent
 Comment Type **ER** Comment Status **D**
 Recent convention in 802.3 PHY naming when there are existing -?R2 PHY types in existence is to name the single lane variant ?R1. Examples being: -KR1, -CR1, -FR1, -LR1
 SuggestedRemedy
 Change 100GBASE-SR to 100GBASE-SR1 throughout the draft
 Proposed Response Response Status **W**
 PROPOSED ACCEPT IN PRINCIPLE.
 Change all instances of 100GBASE-VR to 100GBASE-VR1 and all instances of 100GBASE-SR to 100GBASE-SR1

CI **45** SC **45.2.1.6** P9 L21 # 10
 Dawe, Piers Nvidia
 Comment Type **E** Comment Status **D** Bucket
 Shouldn't you show the modified reserved rows?
 SuggestedRemedy
 per comment
 Proposed Response Response Status **W**
 PROPOSED ACCEPT.

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CI 45 SC 45.2.1.6 P21 L21 # 1

Anslow, Pete Independent

Comment Type TR Comment Status D Bucket

The draft shows :

- 1 1 0 1 0 0 0 = 400GBASE-SR4 PMA/PMD
- 1 1 0 0 1 1 1 = 400GBASE-VR4 PMA/PMD
- 1 1 0 0 1 1 0 = 200GBASE-SR2 PMA/PMD
- 1 1 0 0 1 0 1 = 200GBASE-VR2 PMA/PMD
- 1 1 0 0 1 0 0 = 100GBASE-SR PMA/PMD
- 1 1 0 0 0 1 1 = 100GBASE-VR PMA/PMD

but four of these choices are already allocated to other PMD types:

- 1 1 0 1 0 0 0 is 10GBASE-BR20-D in P802.3cp
- 1 1 0 0 1 1 1 is 10GBASE-BR10-D in P802.3cp
- 1 1 0 0 1 1 0 is not currently allocated
- 1 1 0 0 1 0 1 is not currently allocated
- 1 1 0 0 1 0 0 is 400GBASE-ZR in P802.3cw
- 1 1 0 0 0 1 1 is 400GBASE-ER8 in IEEE Std 802.3cn-2019

It seems that a better solution would be to put all six new PMDs together above the block used by P802.3cp

SuggestedRemedy

Change the allocation to:

- 1 1 1 1 1 1 0 = 400GBASE-SR4 PMA/PMD
- 1 1 1 1 1 0 1 = 400GBASE-VR4 PMA/PMD
- 1 1 1 1 1 0 0 = 200GBASE-SR2 PMA/PMD
- 1 1 1 1 0 1 1 = 200GBASE-VR2 PMA/PMD
- 1 1 1 1 0 1 0 = 100GBASE-SR PMA/PMD
- 1 1 1 1 0 0 1 = 100GBASE-VR PMA/PMD

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 45 SC 45.2.1.20 P22 L38 # 2

Anslow, Pete Independent

Comment Type TR Comment Status D Bucket

The draft shows :

- 1.23.8 200GBASE-SR2 ability
- 1.23.7 200GBASE-VR2 ability

But these bits are already allocated in P802.3ck to:

- 1.23.8 200GBASE-CR2 ability
- 1.23.7 200GBASE-KR2 ability

SuggestedRemedy

Change the allocation to:

- 1.23.10 200GBASE-SR2 ability
- 1.23.9 200GBASE-VR2 ability

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 45 SC 45.2.1.21 P23 L23 # 3

Anslow, Pete Independent

Comment Type TR Comment Status D Bucket

The draft shows :

- 1.24.11 400GBASE-VR4 ability
- But this bit is already allocated in P802.3cw to:
- 1.24.11 400GBASE-ZR ability

SuggestedRemedy

To maintain the usual increasing reach with bit number, change the allocations to:

- 1.24.13 400GBASE-SR4 ability
- 1.24.12 400GBASE-VR4 ability

Proposed Response Response Status W

PROPOSED ACCEPT.

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CI 45 SC 45.2.1.21a P24 L9 # 4
 Anslow, Pete Independent
 Comment Type T Comment Status D Bucket
 The draft shows :
 1.26.11 100GBASE-SR ability
 However, a gap in the allocations was previously made for 100GBASE-SR ability as 1.26.2
 SuggestedRemedy
 Change the allocation to:
 1.26.2 100GBASE-SR ability
 Proposed Response Response Status W
 PROPOSED ACCEPT.

CI 78 SC 78.1.4 P13 L12 # 12
 Dawe, Piers Nvidia
 Comment Type E Comment Status D Bucket
 after 400GBASE-SR4.2
 SuggestedRemedy
 after 400GBASE-SR16, or possibly after 400GBASE-SR8
 Proposed Response Response Status W
 PROPOSED ACCEPT.

CI 78 SC 78.1.4 P13 L13 # 13
 Dawe, Piers Nvidia
 Comment Type E Comment Status D Bucket
 This is too hard to follow
 SuggestedRemedy
 Please show at least one existing row before and after each new one, as 802.3cd did
 Proposed Response Response Status W
 PROPOSED ACCEPT.

CI 80 SC 80.1.4 P15 L18 # 14
 Dawe, Piers Nvidia
 Comment Type E Comment Status D Bucket
 Please show the changes in context
 SuggestedRemedy
 Please show one existing row before and after each new one, as 802.3ck does. Also for Table 80-5.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

CI 91 SC 91.7.4.1 P21 L12 # 15
 Dawe, Piers Nvidia
 Comment Type E Comment Status D Bucket
 Inconsistent font size
 SuggestedRemedy
 Proposed Response Response Status W
 PROPOSED ACCEPT.

CI 116 SC 116.1.3 P23 L41 # 16
 Dawe, Piers Nvidia
 Comment Type E Comment Status D Bucket
 after 400GBASE-SR4.2
 SuggestedRemedy
 Before, going by reach
 Proposed Response Response Status W
 PROPOSED ACCEPT.

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Cl 116 SC 116.1.4 P25 L29 # 17
 Dawe, Piers Nvidia
 Comment Type **E** Comment Status **D** Bucket
 400GBASE-SR4 should come before 400GBASE-SR4.2, and I think it goes after 400GBASE-SR8
 SuggestedRemedy
 Swap 400GBASE-SR4 and 400GBASE-SR4.2, both row and column
 Proposed Response Response Status **W**
 PROPOSED ACCEPT.

Cl 167 SC 167.1 P30 L9 # 18
 Dawe, Piers Nvidia
 Comment Type **E** Comment Status **D**
 This table can be presented better by leaving out the unnecessary "Not applicable" entries
 SuggestedRemedy
 Use columns for clause/annex no., description for 200G, description for 400G, and required/optional status. Similarly for tables 163-2 and 3.
 Proposed Response Response Status **W**
 PROPOSED ACCEPT IN PRINCIPLE.

Cl 167 SC 167.1 P31 L7 # 19
 Dawe, Piers Nvidia
 Comment Type **E** Comment Status **D** Bucket
 Empty line
 SuggestedRemedy
 Remove
 Proposed Response Response Status **W**
 PROPOSED ACCEPT.

Cl 167 SC 167.1.1 P31 L50 # 20
 Dawe, Piers Nvidia
 Comment Type **T** Comment Status **D** Bucket
 FEC (Clause 134 or Clause 91) and PCS (Clause 133 or Clause 82).
 SuggestedRemedy
 FEC (Clause 91) and PCS (Clause 82).
 Proposed Response Response Status **W**
 PROPOSED ACCEPT IN PRINCIPLE.
 Remove references to Clause 134 and Clause 133. Will read: "FEC (Clause 91) and PCS (Clause 82)".

Cl 167 SC 167.2 P32 L20 # 21
 Dawe, Piers Nvidia
 Comment Type **T** Comment Status **D** Bucket
 116.3
 SuggestedRemedy
 80.3?
 Proposed Response Response Status **W**
 PROPOSED ACCEPT IN PRINCIPLE. Correct reference to Clause 80.3.

Cl 167 SC 167.7.1 P39 L32 # 23
 Dawe, Piers Nvidia
 Comment Type **T** Comment Status **D**
 As the channel is relatively slower than for other optical PMDs, we should recognise a different balance of penalties while encouraging good (equalisable) transmitters.
 SuggestedRemedy
 Insert rows for TECQ-10.log10(Ceq') and TECQ-10.log10(Ceq'), limit TBD between 3.4 and 4 dB. Consider if TDECQ max (and SECQ) should be increased. TECQ limit is probably about right.
 Proposed Response Response Status **W**
 PROPOSED REJECT.
 There are currently two specs (three if one counts TDECQ) to limit the use of "poor" optical signals: (a) overshoot/undershoot, and (b) minimum value of cursor in Rx FFE. An example of a Tx waveform that passes these specifications but fails a link test would be useful in promoting a limit on TECQ - 10*log10(Ceq').
 Propose a value for max TDECQ and SECQ.

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CI 167 SC 167.7.1 P39 L32 # 22
 Dawe, Piers Nvidia
 Comment Type E Comment Status D Bucket
 This has TECQ before TDECQ while 802.3cu has the reverse.
 SuggestedRemedy
 Consider which is preferable. Plan to adjust 802.3cu in maintenance, or modify this table.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

CI 167 SC 167.7.3 P41 L24 # 7
 Bruckman, Leon Huawei
 Comment Type E Comment Status D
 Unnecessary text "cabled optical" in Note b. I believe this text has been removed also in the similar clause in 802.3cu
 SuggestedRemedy
 Remove "cabled optical"
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 Replace awkward language while maintaining emphasis on difference between intrinsic fiber attenuation and fiber cable attenuation. Replace "cabled optical fiber attenuation" with "fiber cable attenuation".

CI 167 SC 167.8.1 P41 L51 # 24
 Dawe, Piers Nvidia
 Comment Type T Comment Status D Bucket
 Scrambled idle 119.2.4.9
 SuggestedRemedy
 Scrambled idle or scrambled Remote Fault 82.2.11 or 82.2, 119.2.4 or 119.2.4.9
 Proposed Response Response Status W
 PROPOSED ACCEPT.

CI 167 SC 167.8.5 P43 L25 # 30
 Le Cheminant, Greg Keysight Technologies
 Comment Type T Comment Status D
 The reference receiver bandwidth for TDECQ analysis is typically at half baud to emulate DSP based receivers with anti-aliasing filters. For multimode transmitter test, the observation bandwidth is reduced further to emulate the dispersion that is created by the fiber span. An alternative approach should be considered. The transmitter waveform is acquired in the half-baud bandwidth. For TECQ, this waveform can be directly analyzed. For TDECQ, the waveform is additionally passed through a second processing block that emulates the fiber. This could be as simple as a low-pass Bessel-Thomson filter, but could be something that better emulates the physical impact of the fiber span, to be determined by the group. This method has the advantage of being able to provide several transmitter metrics, for both SR and VSR requirements, with a single oscilloscope acquisition, reducing overall test time and cost, and likely better emulating the true channel response
 SuggestedRemedy
 Change the text of lines 24-34 of page 43 (55 in the overall document) to read: The combination of the O/E converter and the oscilloscope used to measure the optical waveform has a 3 dB bandwidth of approximately 26.5 GHz with a fourth-order Bessel-Thomson response to at least 1.5×26.5 GHz. At frequencies above 1.5×26.5 GHz, the response should not exceed 24 dB. Compensation may be made for any deviation from an ideal fourth-order Bessel-Thomson response. Prior to TDECQ analysis the waveform is passed through a function that emulates the response of the maximum allowed fiber span. This function is described as TBD
 Proposed Response Response Status W

Presentation accompanying the comment expected.

CI 167 SC 167.8.5.1 P43 L51 # 25
 Dawe, Piers Nvidia
 Comment Type T Comment Status D
 We have 9 taps rather than the usual 5 because the channel is relatively slower than for other optical PMDs. So the last few taps should be correcting the tail of the response and should be quite small.
 SuggestedRemedy
 Impose limits on the absolute values of tap coefficients 7, 8 and 9. Also for the last taps for TECQ, depending how long that reference equalizer is.
 Proposed Response Response Status W
 PROPOSED REJECT.
 What are the proposed limits for the tap coefficients 7, 8 and 9? An analysis of constraints placed on Tx by these limits would help evaluate the impact.

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CI 167 SC 167.8.7 P44 L42 # 26
 Dawe, Piers Nvidia
 Comment Type T Comment Status D
 1E-2 allows too much of the waveform beyond the limit and does a poor job of controlling overshoot
 SuggestedRemedy
 Change to 3E-3 TBC for now, and let people try that in the lab
 Proposed Response Response Status W
 PROPOSED ACCEPT IN PRINCIPLE.
 The hit ratio for overshoot/undershoot calculation is 1E-2 TBC in the draft. Given that it is TBC and in the neighborhood of the proposed value in the comment, suggest making no change.

CI 167 SC 167.8.10 P45 L18 # 27
 Dawe, Piers Nvidia
 Comment Type E Comment Status D Bucket
 This sentence (and one in 167.8.13) is too long and hard to understand. It should be divided in two, as in 167.8.5 and 167.8.6.
 SuggestedRemedy
 Change "response to at least 1.3 x 53.125 GHz and at frequencies above 1.3 x 53.125 GHz the response should not exceed -24 dB." to "response to at least 1.3 x 53.125 GHz. At frequencies above 1.3 x 53.125 GHz the response should not exceed -24 dB."
 Similarly in 167.8.13.
 Proposed Response Response Status W
 PROPOSED ACCEPT.

CI 167 SC 167.10.1 P49 L25 # 28
 Dawe, Piers Nvidia
 Comment Type E Comment Status D Bucket
 and400GBASE-SR4.
 SuggestedRemedy
 insert a space
 Proposed Response Response Status W
 PROPOSED ACCEPT.

CI 167 SC 167.10.3.3 P52 L24 # 31
 Xie, Chongjin Alibaba
 Comment Type TR Comment Status D
 Figure 167-8 only includes diagrams for flat 12 fiber MPO connectors.
 SuggestedRemedy
 Add diagrams that illustrate APC 12 fiber MPO connectors
 Proposed Response Response Status W
 PROPOSED ACCEPT.

CI 167 SC 167.11.3 P54 L6 # 29
 Dawe, Piers Nvidia
 Comment Type E Comment Status D Bucket
 PICS needs work
 SuggestedRemedy
 Revise PICS
 Proposed Response Response Status W
 PROPOSED ACCEPT.