Cl **FM** *SC* **FM** *P* **1** *L* **27** # 20

Issenhuth, Tom — Huawei

Comment Type **E** *Comment Status* **X**

802.3ch and 802.3ca have been approved as standards.

SuggestedRemedy

Change -20xx to -2020 for both.

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **1** *L* **27** # 18

Issenhuth, Tom — Huawei

Comment Type **E** *Comment Status* **X**

Missing IEEE Std 802.3cr-20xx, IEEE Std 802.3cp-20xx and IEEE Std 802.3cs-20xx

SuggestedRemedy

Insert .cr and .cp after .ca and insert .cs after .cu

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **1** *L* **28** # 70

Grow, Bob — RMG Consulting

Comment Type **T** *Comment Status* **X**

Including IEEE Std 802.3cu-20xx in the list (which is in WG recirculation 2) makes sense (and is justified by inclusion of base text from cu, but I believe with P802.3cr (which is in SA ballot) the list should also include IEEE Std 802.3cr-20xx. as P802.3cu/D2.2, 151.9.1 includes a reference to J2, and therefore needs to follow P802.3cr as currently written.

SuggestedRemedy

Add IEEE Std 802.3cr-20xx to the list as the 10th amendment (before IEEE Std 802.3cu-20xx).

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **1** *L* **28** # 62

Marris, Arthur — Cadence Design Systems

Comment Type **E** *Comment Status* **X**

802.3ch-2020 and 802.3ca-2020 have been published

SuggestedRemedy

Change "802.3ch-20XX and 802.3ca-20XX" tp "802.3ch-2020 and 802.3ca-2020" throught the document

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **1** *L* **39** # 1

Hajduczenia, Marek — Charter Communications

Comment Type **E** *Comment Status* **X**

"Draft D2.0 is prepared for Task Force review"

SuggestedRemedy

Likely for initial Working Group review. Next versions should say "working Group ballot recirculation"

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **2** *L* **5** # 71

Grow, Bob — RMG Consulting

Comment Type **E** *Comment Status* **X**

This instance of "Energy Efficient Ethernet" isn't hyphenated.

SuggestedRemedy

Energy-Efficient Ethernet

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **12** *L* **20** # 35

Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**

IEEE802.3ch was approved by the Standards Board.

SuggestedRemedy

Change: 20xx to 2020

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **12** *L* **20** # 21

Issenhuth, Tom Huawei

Comment Type **E** *Comment Status* **X**

802.3ch has now been approved as a standard.

SuggestedRemedy

Change -20xx to -2020.

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **12** *L* **22** # 72

Grow, Bob RMG Consulting

Comment Type **E** *Comment Status* **X**

This amendment has a number.

SuggestedRemedy

Insert "Amendment 8 --".

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **12** *L* **22** # 36

Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**

ch is Amendment 8. The description has been slightly modified for publication.

SuggestedRemedy

Add "Amendment 8(Em dash)" before the description.
Change: Clause 149 and Annex 149A and Annex 149B
To: Clause 149, Annex149A, and Annex 149BB

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **12** *L* **26** # 22

Issenhuth, Tom Huawei

Comment Type **E** *Comment Status* **X**

802.3ca has now been approved as a standard.

SuggestedRemedy

Change -20xx to -2020.

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **12** *L* **26** # 37

Wienckowski, Natalie General Motors

Comment Type **E** *Comment Status* **X**

IEEE802.3ca was approved by the Standards Board.

SuggestedRemedy

Change: 20xx to 2020

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **12** *L* **28** # 38

Wienckowski, Natalie — General Motors

Comment Type **E** *Comment Status* **X**

ca is Amendment 9.

SuggestedRemedy

Add "Amendment 9(Em dash)" before the description.

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **12** *L* **28** # 73

Grow, Bob — RMG Consulting

Comment Type **E** *Comment Status* **X**

This amendment has a number.

SuggestedRemedy

Insert "Amendment 9 --".

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **12** *L* **37** # 19

Issenhuth, Tom — Huawei

Comment Type **E** *Comment Status* **X**

Missing IEEE Std 802.3cr-20xx, IEEE Std 802.3cp-20xx and IEEE Std 802.3cs-20xx

SuggestedRemedy

Insert .cr and .cp after .ca and insert .cs after .cu

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **12** *L* **37** # 74

Grow, Bob — RMG Consulting

Comment Type **E** *Comment Status* **X**

Because this draft references Annex J2 (154.9.1), IEEE Std 802.3cr needs to precede this project in amendment number because it adds the Annex.

SuggestedRemedy

Add: IEEE Std 802.3crTM-20xx IEEE Std 802.3crTM-20xx

Amendment 10 -- This amendment includes changes to IEEE Std 802.3-2018 and adds Annex J. This amendment replaces references to the IEC 60950 series of standards (including IEC 60950-1 "Information technology equipment—Safety—Part 1: General requirements") with appropriate references to the IEC 62368 "Audio/video, information and communication technology equipment" series and makes appropriate changes to the standard corresponding to the new references This amendment includes changes to IEEE Std 802.3-2018 and adds Annex J. This amendment replaces references to the IEC 60950 series of standards (including IEC 60950-1 "Information technology equipment—Safety—Part 1: General requirements") with appropriate references to the IEC 62368 "Audio/video, information and communication technology equipment" series and makes appropriate changes to the standard corresponding to the new references.

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **21** *L* **2** # 63

Marris, Arthur — Cadence Design Systems

Comment Type **E** *Comment Status* **X**

It would be nice if coherent modulation was mentionned in the abstract

SuggestedRemedy

Change second sentence in abstract to: "This amendment adds 100 Gb/s Physical Layer specifications and management parameters for operation over DWDM systems using coherent modulation with reaches of at least 80 km."

Proposed Response *Response Status* **O**

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

Hajduczenia, Marek — Charter Communications

Comment Type **E** *Comment Status* **X**

Wrong copyright year

SuggestedRemedy

2019 is gone, please use 2020

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **1** *L* **27** # 8

Lewis, Jon — Dell EMC

Comment Type **E** *Comment Status* **X**

Missing IEEE Std 802.3cr-202x in the list

SuggestedRemedy

Add "IEEE std 802.3cr-202x" and align the list with the anticipated order of publication.

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **1** *L* **29** # 7

Lewis, Jon — Dell EMC

Comment Type **E** *Comment Status* **X**

This is Working Group ballot

SuggestedRemedy

Change "Task Force review" to "Working Group ballot"

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **12** *L* **36** # 9

Lewis, Jon — Dell EMC

Comment Type **E** *Comment Status* **X**

Add IEEE std 802.3cr information

SuggestedRemedy

Add "IEEE Std 802.3crTM-20xx
This amendment includes changes to IEEE Std 802.3-2018 and adds Annex J. This amendment
replaces references to the IEC 60950 series of standards (including IEC 60950-1 "Information technology equipment—Safety—Part 1: General requirements") with appropriate references to the IEC 62368 "Audio/video, information and communication technology equipment" series and makes appropriate changes to the standard corresponding to the new references." and align with expected publication order.

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4** *P* **22** *L* **17** # 101

Maki, Jeffery — Juniper Networks

Comment Type **E** *Comment Status* **X**

Italic comment text Insert the following new definition after 1.4.181 “channel insertion loss”: and text below referres to the wrong sub-cluase of IEEE Std 802.3-2018.

SuggestedRemedy

Change 1.4.181 to 1.4.180, and 1.4.181a to 1.4.180a.

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4** *P* **22** *L* **34** # 93

Dambrosia, John — Futurewei, A U.S. Subsidiary of Huawei

Comment Type **ER** *Comment Status* **X**

For a DWDM system the presence of an optical mux / demux is key, as illustrated in Fig 154-3, and should be explicitly stated in the definition..

SuggestedRemedy

Change definition of 1.4.237d DWDM System to
An aggregate of DWDM links optically multiplexed and demuxed onto and off of either a single optical fiber or a single optical
fiber per direction.

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4** *P* **22** *L* **37** # 75

Grow, Bob — RMG Consulting

Comment Type **E** *Comment Status* **X**

802.3bt deleted 294 and instructed renumbering. Previous amendments have used the renumbered subclause for items after 294.

SuggestedRemedy

The instruction should reference 400, and the insertion should be numbered 400a similar to previous amendments.

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4.35a** *P* **22** *L* **5** # 81

Dambrosia, John — Futurewei, A U.S. Subsidiary of Huawei

Comment Type **ER** *Comment Status* **X**

The term "coherent" only appears 2x in D2.0 of P802.3ct, its use in defining the term "100GBASE-ZR" is not helpful to the reader

SuggestedRemedy

replace current definition with -"An IEEE 802.3 family of Physical Layer devices using 100GBASE-R encoding and
a PMD that employs dual polarization differential quadrature phase shift keying (DQPSK) modulation. (See IEEE Std 802.3, Clause 154.)

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4.35b** *P* **22** *L* **8** # 139

Dawe, Piers — Nvidia

Comment Type **T** *Comment Status* **X**

Saying that 100GBASE-ZR uses 100GBASE-R encoding, with identical wording to e.g. "100GBASE-SR4: IEEE 802.3 Physical Layer specification for 100 Gb/s using 100GBASE-R encoding" is very misleading. There's a lot of extra complexity here that isn't covered by "DP-DQPSK modulation".

SuggestedRemedy

Change "using 100GBASE-R encoding and DP-DQPSK modulation" to "using 100GBASE-R encoding, GMP, SC-FEC, and DP-DQPSK modulation".

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4.60a** *P* **22** *L* **14** # 3

Hajduczenia, Marek — Charter Communications

Comment Type **E** *Comment Status* **X**

is there any specific reason to capitalize "Black Link" and "Channel Spacing"?

SuggestedRemedy

All other definitions use lower caps unless it is a propwer name. Consider dropping caps
Same for 1.4.237a/b/d (no need to capitalize Channel/Link/System)
Same for 1.4.401a - drop case

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4.160a** *P* **22** *L* **14** # 129

Dawe, Piers — Nvidia

Comment Type **E** *Comment Status* **X**

To match the rest of the document, Black Link should be black link

SuggestedRemedy

Scrub the new definitions for rogue capitals

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4.160a** *P* **22** *L* **14** # 83

Dambrosia, John — Futurewei, A U.S. Subsidiary of Huawei

Comment Type **ER** *Comment Status* **X**

A "black Link" is an approach to describing a DWDM Channel, not a link itself.

SuggestedRemedy

Change definition -
A black link s an approach to defining a single-mode fiber based DWDM channel by specifying the characteristics of the input and output of the link and its transfer characteristics, without specifying how the link is defined.

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4.181a** *P* **22** *L* **20** # 137

Dawe, Piers — Nvidia

Comment Type **T** *Comment Status* **X**

"WDM application": weasel word: no specific meaning or ambiguous

SuggestedRemedy

WDM wavelength plan

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4.181a** *P* **22** *L* **20** # 138

Dawe, Piers — Nvidia

Comment Type **T** *Comment Status* **X**

I think that the implication that no other grids but ITU-T ones are possible is incorrect and not necessary.

SuggestedRemedy

If it's true, and I think it is because Clause 54 uses "WWDM", insert "In this standard" before "DWDM channel spacings". Delete the sentence about CWDM if it's not needed, or join the sentences.

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4.237** *P* **22** *L* **25** # 84

Dambrosia, John — Futurewei, A U.S. Subsidiary of Huawei

Comment Type **ER** *Comment Status* **X**

There is no definition for DWDM

SuggestedRemedy

add definition for DWDM -
An optical WDM technology where the frequency spacing is less than or equal to 1000 GHz.

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4.237a** *P* **22** *L* **25** # 61

Zimmerman, George — CME Consulting/ADI, Cisco, Commscope, Marvell, S

Comment Type **TR** *Comment Status* **X**

The definitions DWDM Channel, Link, PHY, and System are circular without a definition of DWDM. A definition for DWDM was proposed in the work, (http://www.ieee802.org/3/B10K/public/18_03/dambrosia_b10k_01_0318.pdf) but never included in the draft, and it is not present in 802.3-2018. While Wavelength Division Multiplexing may be self explanatory, and the expansion obvious, the expansions in the 802 abbreviations don't provide the necessary technical information for a definition, basically, how dense is dense. A definition from the study group, based on G.671, modified to make it clear that optical transmission is meant, is offered.

SuggestedRemedy

Add new definition 1.4.227a Dense Wavelength Division Multiplexing (DWDM). An optical WDM technology where the frequency spacing is less than or equal to 1000 GHz.

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4.237b** *P* **22** *L* **28** # 130

Dawe, Piers — Nvidia

Comment Type **T** *Comment Status* **X**

According to 154.6, the black link extends from TP2 to TP3, excluding the PHYs. 1.4.160a says that the black link is a link. 1.4.302 says that a link is the transmission path between any two interfaces of generic cabling. (From ISO/IEC 11801.) Implying that it doesn't include the PHYs. This draft definition for DWDM Link includes the PHYs.

SuggestedRemedy

Rename "DWDM Link" to something not "link" and use the corrected name in 1.4.237d DWDM System.

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4.401a** *P* **22** *L* **40** # 131

Dawe, Piers — Nvidia

Comment Type **E** *Comment Status* **X**

Gratuitous abbreviation: SOP is not used anywhere but this sentence.

SuggestedRemedy

Just write it out, the simple way: The variation of insertion loss due to a variation of the state of polarization over all states of polarization
Or, if a measure of the range is meant, rather than the concept that there is a range, perhaps:
The range of insertion losses over all states of polarization

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4.401a** *P* **22** *L* **40** # 132

Dawe, Piers — Nvidia

Comment Type **T** *Comment Status* **X**

What is this detail "within the channel frequency range (DWDM link) or channel wavelength range (CWDM and WWDM links)" doing here? 1.4 definitions should be short, simple and high level. There's no other mention of CWDM in this document, and PDL is something that happens without WDM anyway.

SuggestedRemedy

Create a new subsection near 154.8.17 to define precisely over what conditions PDL is defined. Delete "within the channel frequency range (DWDM link) or channel wavelength range (CWDM and WWDM links)" from here; add something such as "...loss of an instance of fiber optic cabling" to indicate that PDL is something to do with fibre optics.

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4.401a** *P* **22** *L* **40** # 133

Dawe, Piers — Nvidia

Comment Type **T** *Comment Status* **X**

State of polarization of what?

SuggestedRemedy

Of an optical signal? optical transmitter?

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4.401A** *P* **22** *L* **40** # 85

Dambrosia, John — Futurewei, A U.S. Subsidiary of Huawei

Comment Type **ER** *Comment Status* **X**

The term "SOP" is only used 2x in D2.0, both times in 1.4.401a
in the base 802.3 standard, SOP stand stands for "Start-of-packet propagation delay" and is defined in 27.3.1.3.3. Its use is isn Clauses 27, 29, 41, and 61.

SuggestedRemedy

Replace sentence with -
1.4.401a Polarization Dependent Loss: The variation of insertion loss due to a variation of the state of
polarization over all states of polarization within the channel frequency range (DWDM link) or channel wavelength
range (CWDM and WWDM links).

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.133a.1** *P* **27** *L* **28** # 4

Hajduczenia, Marek — Charter Communications

Comment Type **TR** *Comment Status* **X**

On reading the definition of this bit, it is absolutely not clear what "Integer value of the Tx optical channel index" really is. Is it frequency in nm, some arbotrary channel number, or something altogether else (frequency in THz?)

SuggestedRemedy

Please clarify what specific column from Table 154–6 is mapped into this register
The same comment applies to register 1.820.5:0 defined in 45.2.1.133e.2

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.186aa** *P* **35** *L* **22** # 5

Hajduczenia, Marek — Charter Communications

Comment Type **TR** *Comment Status* **X**

First use of the term IFEC, not defined anywhere really.

SuggestedRemedy

Provide definition (do not see it in 802.3-2018 right now)

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.186aa** *P* **35** *L* **49** # 6

Hajduczenia, Marek — Charter Communications

Comment Type **E** *Comment Status* **X**

Block of text is misaligned / extra spaces at the front

SuggestedRemedy

Per comment

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.186ab** *P* **35** *L* **48** # 32

Nicholl, Shawn — Xilinx

Comment Type **ER** *Comment Status* **X**

Extra space at start of line.

SuggestedRemedy

Remove the space that precedes "The assignment of bits …"

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.186ab** *P* **36** *L* **21** # 64

Marris, Arthur — Cadence Design Systems

Comment Type **E** *Comment Status* **X**

1.2201.7:3 are reserved

SuggestedRemedy

Change "1.2201.6:3" to "1.2201.7:3" in Table 45–150ab

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.186ab.8** *P* **37** *L* **33** # 39

Wienckowski, Natalie — General Motors

Comment Type **E** *Comment Status* **X**

Awkward wording

SuggestedRemedy

Change: the decoder has this ability to the bypass error indication function
To: the decoder has this ability to bypass the error indication function

Proposed Response *Response Status* **O**

Cl **45** *SC* **45.2.1.186ah** *P* **39** *L* **44** # 65

Marris, Arthur — Cadence Design Systems

Comment Type **E** *Comment Status* **X**

This is the first use the term SC-FEC so it would be good to explain the abbreviation

SuggestedRemedy

Change text to: "The assignment of bits in the SC-FEC (staircase FEC) alignment status 1 register is shown in Table 45–150ag."

Proposed Response *Response Status* **O**

Cl **80** *SC* **80.1.3** *P* **48** *L* **5** # 86

Dambrosia, John — Futurewei, A U.S. Subsidiary of Huawei

Comment Type **ER** *Comment Status* **X**

While it is true that 100GBASE-Z uses 100GBASE-R encoding, it uses a diffferent modulation approach, but this is not shown architecturally in Fig 80-1.

SuggestedRemedy

Redraw Fig 80-1 to include a stack for 100GBASE-Z
Delete "In Figure 80-1 change the list of medium types under CGMII as follows: "100GBASE-R, or 100GBASE-P, or 100GBASE-Z." with proper strike-out and underline.

Proposed Response *Response Status* **O**

Cl **80** *SC* **80.1.3** *P* **48** *L* **14** # 15

Anslow, Pete — Self

Comment Type **ER** *Comment Status* **X**

Changes to figures (other than the title) should show the figure as changed, not rely on the roll-up editor to interpret the change.
Also, there should only be one "or"

SuggestedRemedy

Change the editing instruction to:
"Replace Figure 80-1 with the following figure:"
bring Figure 80-1 in to the draft and change:
"100GBASE-R or 100GBASE-P" to:
"100GBASE-R,
100GBASE-P,
or 100GBASE-Z"
with no underline or strikethrough.

Proposed Response *Response Status* **O**

Cl **80** *SC* **80.1.3** *P* **48** *L* **16** # 76

Grow, Bob — RMG Consulting

Comment Type **E** *Comment Status* **X**

The text inappropriately includes editing instruction.

SuggestedRemedy

In Figure 80-1, replace the list of medium types ("100GBASE-R or 100GBASE-P") under CGMII with "100GBASE-R or 100GBASE-P or 100GBASE-Z". Delete line 16. Or alternately, provide a replacement table with an editing instruction to replace Table 80-1.

Proposed Response *Response Status* **O**

Cl **80** *SC* **80.1.3** *P* **48** *L* **16** # 40

Wienckowski, Natalie — General Motors

Comment Type **E** *Comment Status* **X**

It seems this is a note for the Editor on what they were supposed to do. When this is "rolled up" the changes aren't shown. I don't know if the intent was to show an updated drawing, or just to provide the changed text that would be in the drawing.

SuggestedRemedy

Change: "100GBASE-R, or 100GBASE-P, or 100GBASE-Z." with proper strike-out and underline.
To: 100GBASE-R(start underline),(end underline) or 100GBASE-P(start underline), or 100GBASE-Z(end underline)

Proposed Response *Response Status* **O**

Cl **80** *SC* **80.1.4** *P* **48** *L* **20** # 41

Wienckowski, Natalie — General Motors

Comment Type **E** *Comment Status* **X**

"Add" is not a proper editing instruction, you need to use "insert". When all the text shown is being inserted, it doesn't need to be underlined.

SuggestedRemedy

Change editing instruction to: Insert the following text as a new eight paragraph of 80.1.4 as follows:
Also, remove underline on text to be inserted.

Proposed Response *Response Status* **O**

Cl **80** *SC* **80.1.4** *P* **48** *L* **27** # 42

Wienckowski, Natalie — General Motors

Comment Type **E** *Comment Status* **X**

The (Em dash) after the table number is not part of the table number and should not be included in the reference.

SuggestedRemedy

Remove the (EM dash) after Table 80-1 in the editing instruction. Look for this throughout the document, e.g. P49L3, etc.

Proposed Response *Response Status* **O**

Cl **80** *SC* **80.1.4** *P* **48** *L* **36** # 87

Dambrosia, John — Futurewei, A U.S. Subsidiary of Huawei

Comment Type **TR** *Comment Status* **X**

The description of the 100GBASE-ZR PHY does not describe the nature of the agreed upon PHY - which is that a 100GBASE-ZR PHY may support operation of a single DWDM link over 1 to 48 DWDM channels comprised of Tx and Rx signaling, where the abilities are defined for the device and selected by the users

SuggestedRemedy

Change description to -
100 Gb/s PHY using 100GBASE-R encoding capable of transmission over a specified channel on a defined DWDM grid in each direction of transmission with reach up to at least 80km (see Clause 154).

Proposed Response *Response Status* **O**

Cl **80** *SC* **80.1.5** *P* **49** *L* **3** # 43

Wienckowski, Natalie — General Motors

Comment Type **E** *Comment Status* **X**

Where is table 80-4a?

SuggestedRemedy

Insert the following in the editing instruction after Table 80-4a: (as inserted by IEEE Std 802.3cd-2018)

Proposed Response *Response Status* **O**

Cl **80** *SC* **80.1.5** *P* **49** *L* **23** # 90

Dambrosia, John — Futurewei, A U.S. Subsidiary of Huawei

Comment Type **TR** *Comment Status* **X**

The multiple optional AUIs and FEC will not be clear to the general user to easily figure out, plus defining the inverse RS-FEC sublayer as optional isn't really the best descriptor It is more "conditional" meaning that its use is dependent on whether an optional 100GAUI-n is used. Providing more description here would make the standard more readable to the general user.

SuggestedRemedy

1) Modify note a to "O=optional, M=Mandatory, C=Conditional
2) change Clause 152 Inverse RS-FEC from M to C, and add an indicator for Note b in next to "C"
3) add note B - Clause 152 inverse RS-FEC needed when deploying Clause 91 RS-FEC in combination with 100GAUI-n defined by 135D, 135E, 135F, or 135G
4) add similar note to Table 154-1

Proposed Response *Response Status* **O**

Cl **80** *SC* **80.1.5** *P* **49** *L* **24** # 66

Marris, Arthur — Cadence Design Systems

Comment Type **T** *Comment Status* **X**

Is Clause 91 really an option?

SuggestedRemedy

Delete "O" from the 91 column or delete the column completely in Table 80-4b. Also consider deleting 91 row from Table 154-1

Proposed Response *Response Status* **O**

Cl **80** *SC* **80.2.2** *P* **49** *L* **33** # 77

Grow, Bob — RMG Consulting

Comment Type **E** *Comment Status* **X**

The base text and change marking is incorrect.

SuggestedRemedy

There shoud be a strikethrough "and" before 100GBASE-P" and ", and 100GBASE-Z" should be underscore.

Proposed Response *Response Status* **O**

Cl **80** *SC* **80.2.4** *P* **50** *L* **5** # 10

Laubach, Mark — Self

Comment Type **E** *Comment Status* **X**

"Clause 83", "Clause 94", "Clause 135" and "Clause 153" should be forest green.

SuggestedRemedy

Make 'em forest green.

Proposed Response *Response Status* **O**

Cl **80** *SC* **80.2.4** *P* **50** *L* **9** # 57

Trowbridge, Steve — Nokia

Comment Type **T** *Comment Status* **X**

A clause 135 PMA may be used across the C2M interface (above the Inverse RS-FEC) in a 100GBASE-ZR PHY type

SuggestedRemedy

Change:
"Clause 135 specifies a PMA that may be used in other 100GBASE-P PHY types."
to
"Clause 135 specifies a PMA that may be used in other 100GBASE-P or 100GBASE-ZR PHY types."

Proposed Response *Response Status* **O**

Cl **80** *SC* **80.3.2** *P* **51** *L* **20** # 58

Trowbridge, Steve — Nokia

Comment Type **ER** *Comment Status* **X**

The "…" appears in the wrong place - 3 occurrences in Figure 80-4a

SuggestedRemedy

Move "…" to be between lane 1 and lane 19 in both the Tx and Rx direction in the PMA service interface, and between lane 1 and lane 19 in the Rx direction in the FEC service interface

Proposed Response *Response Status* **O**

Cl **80** *SC* **80.5** *P* **54** *L* **1** # 44

Wienckowski, Natalie — General Motors

Comment Type **E** *Comment Status* **X**

The editing instruction says to change the table, but I don't see any underline or strikethrough in the table to indicate changes.

SuggestedRemedy

Delete the editing instruction and table 80-7.

Proposed Response *Response Status* **O**

Cl **82** *SC* **82.3.3** *P* **56** *L* **14** # 88

Dambrosia, John — Futurewei, A U.S. Subsidiary of Huawei

Comment Type **TR** *Comment Status* **X**

This note is specific to the mapping of 40GBASE-R PCS blocks. Editing it is not within scope of the approved P802.3ct PAR.

SuggestedRemedy

these proposed changes should be deleted.

Proposed Response *Response Status* **O**

Cl **83C** *SC* **83C.4.1** *P* **121** *L* **34** # 126

Dawe, Piers — Nvidia

Comment Type **E** *Comment Status* **X**

Too much spacing

SuggestedRemedy

Use left justification rather than full

Proposed Response *Response Status* **O**

Cl **135A** *SC* **135A.3.1** *P* **122** *L* **35** # 134

Dawe, Piers — Nvidia

Comment Type **T** *Comment Status* **X**

There is no such thing as 100GBASE-Z/P. Do you mean 100GBASE-ZR? Or, 100GBASE-Z or 100GBASE-P?
Is the BASE-P part for P802.3ck to add, not this project?
Why would Z come before P? Usually we go slow to fast, short to long, wide to narrow.

SuggestedRemedy

Change to:100GBASE-Z, or change to: 100GBASE-P or 100GBASE-Z. Also in Figure 135A-10.

Proposed Response *Response Status* **O**

Cl **135A** *SC* **135A.3.1** *P* **122** *L* **36** # 127

Dawe, Piers — Nvidia

Comment Type **E** *Comment Status* **X**

Silly hyphenation. Inter-face would make sense, in-terface doesn't.

SuggestedRemedy

Set the minimum hyphenation fragment size to 3 (I thought that was done years ago), and make the left column wider.

Proposed Response *Response Status* **O**

Cl **135A** *SC* **135A.3.2** *P* **123** *L* **26** # 125

Dawe, Piers — Nvidia

Comment Type **E** *Comment Status* **X**

INTERFACEMMD

SuggestedRemedy

Insert the break

Proposed Response *Response Status* **O**

Cl **152** *SC* **152.1.1** *P* **57** *L* **13** # 89

Dambrosia, John — Futurewei, A U.S. Subsidiary of Huawei

Comment Type **E** *Comment Status* **X**

This language is too far reaching - "used across a chip-to-chip or chip-to-module interface" . The spec cares about IEEE defined interfaces, not just chip-to-chip or chip-to module interface and a different FEC is used for the PMD."

SuggestedRemedy

Replaces "is used across a chip-to-chip or chip-to-module interface" with "is used with any physical instantiation of 100GAUI-n and a different FEC is needed for the intended PMD."

Proposed Response *Response Status* **O**

Cl **152** *SC* **152.1.2** *P* **58** *L* **21** # 91

Dambrosia, John — Futurewei, A U.S. Subsidiary of Huawei

Comment Type **TR** *Comment Status* **X**

A generic FEC block is used which is because there are different FECs may be used with different PHYs. The same is true for PMAs. Therefore these two sublayers are conditional based on phy type

SuggestedRemedy

For Fig 152-1, add note "1" next to FEC and PMA sublayers, add note that states "Conditional based on PHY type". See Fig 80-1 for reference of implementation of note. Also modify Figures 135A-9, 135A-10 in a similar fashion.

Proposed Response *Response Status* **O**

Cl **152** *SC* **152.3.7** *P* **68** *L* **3** # 26

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **X**

In 91.5.2.7 it refers to tx_scrambled and am_txmapped, but in this Clause it's rx_scrambled and am_rxmapped.

SuggestedRemedy

Add the following after 91.5.2.7: "with the exception that the message symbols come from rx_scrambled and rx_ammapped."

Proposed Response *Response Status* **O**

Cl **152** *SC* **152.5.1** *P* **60** *L* **44** # 11

Laubach, Mark — Self

Comment Type **E** *Comment Status* **X**

Suggest modifying the line beginning with "<ital>inst<ital>" for clarity.

SuggestedRemedy

Consider changing the beginning of the sentence to "Where <ital>inst<ital> is ". Then tighening up the spaces and horizontal centering for the line.

Proposed Response *Response Status* **O**

Cl **152** *SC* **152.5.2.3** *P* **61** *L* **20** # 27

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **X**

The decoder is identical to clause 91 except for the variable that contains the data. State that clearly.

SuggestedRemedy

Change "The Reed-Solomon decoder extracts the message symbols from the RS(544,514) codeword, corrects them as necessary, and discards the parity symbols. The message symbols correspond to 20 transcoded blocks tx_scrambled. See 91.5.3.3."
To: "The Reed-Solomon decoder implements the RS(544,510) FEC decoder described in 91.5.3.3 with the exception that message symbols come from tx_scrambled."

Proposed Response *Response Status* **O**

Cl **152** *SC* **152.5.2.3** *P* **61** *L* **21** # 33

Nicholl, Shawn — Xilinx

Comment Type **TR** *Comment Status* **X**

This sub-clause makes reference to 91.5.3.3, without indication of differences from 91.5.3.3.

SuggestedRemedy

91.5.3.3 (as amended by 802.3cd-2018) contains an optional 91.5.3.3.1 FEC Degraded SER. Propose to add a sentence to 152.5.2.3 saying "The optional sub-clause 91.5.3.3.1 is not supported for the Inverse RS-FEC sublayer".

Proposed Response *Response Status* **O**

Cl **152** *SC* **152.5.2.5** *P* **61** *L* **38** # 45

Wienckowski, Natalie — General Motors

Comment Type **E** *Comment Status* **X**

"as follows" should always be followed by ":", not "."

SuggestedRemedy

Change: as follows.
To: as follows:
Make this change throughout the draft.

Proposed Response *Response Status* **O**

Cl **152** *SC* **152.5.3.1** *P* **65** *L* **5** # 34

Nicholl, Shawn — Xilinx

Comment Type **ER** *Comment Status* **X**

Typo in concatenatiing

SuggestedRemedy

Replace "concatenatiing" with "concatenating"

Proposed Response *Response Status* **O**

Cl **152** *SC* **152.5.3.2** *P* **65** *L* **16** # 114

Law, David — Hewlett Packard Enterprise

Comment Type **E** *Comment Status* **X**

Figure 82.14' should read 'Figure 82-14'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **O**

Cl **152** *SC* **152.5.3.5** *P* **66** *L* **7** # 25

Slavick, Jeff — Broadcom

Comment Type **ER** *Comment Status* **X**

Missed a conversion from Tx to Rx.

SuggestedRemedy

Change "rx_coded_c, from tx_xcoded" to "rx_coded_c, from rx_coded"

Proposed Response *Response Status* **O**

Cl **152** *SC* **152.5.3.6** *P* **67** *L* **35** # 46

Wienckowski, Natalie — General Motors

Comment Type **E** *Comment Status* **X**

Incorrect number format.

SuggestedRemedy

Change: 16384
To: 16 384 (with a non-breaking space)

Proposed Response *Response Status* **O**

Cl **152** *SC* **152.5.3.7** *P* **68** *L* **1** # 28

Slavick, Jeff — Broadcom

Comment Type **E** *Comment Status* **X**

Capitlazation

SuggestedRemedy

Make the "E" in "Encoder" lowercase for the section title. And the first sentence of the text in the section.

Proposed Response *Response Status* **O**

Cl **152** SC **152.5.3.8** P **68** L **5** # 29

Slavick, Jeff — Broadcom

Comment Type **E** *Comment Status* **X**

Capitlazation

SuggestedRemedy

Make the "D" in "Distribution" lowercase for the section title.

Proposed Response *Response Status* **O**

Cl **152** SC **152.5.4.2.1** P **70** L **49** # 119

Law, David — Hewlett Packard Enterprise

Comment Type **E** *Comment Status* **X**

Suggest that 'A variable set ...' should read 'A Boolean variable set ...'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **O**

Cl **152** SC **152.6** P **72** L **15** # 67

Marris, Arthur — Cadence Design Systems

Comment Type **TR** *Comment Status* **X**

Insert IFEC enable functionality that is currently specified in IEEE Draft P802.3ck/D1.2

SuggestedRemedy

Incoroporate the 802.3ck modifications to 152.6 and 45.2.1.186aa in 802.3ct. Also make it so IFEC is enabled by setting the variable to one (not zero) "When the IFEC_Enable variable is set to one, the Inverse RS-FEC sublayer performs the transmit function as specified in 152.5.2 and the receive function as specified in 152.5.3. When the variable is set to a zero, the transmit and receive functions are disabled, and the Inverse RS-FEC sublayer is bypassed,"

Proposed Response *Response Status* **O**

Cl **153** SC **153.1.2** P **80** L **35** # 47

Wienckowski, Natalie — General Motors

Comment Type **E** *Comment Status* **X**

Why is AN in the list of acronyms for the Figure when AN isn't used in the Figure? If it's in the Figure and I missed it, NEGOTATION should be NEGOTIATION.

SuggestedRemedy

Delete: AN = AUTO-NEGOTATION

Proposed Response *Response Status* **O**

Cl **153** SC **153.2.1** P **80** L **50** # 120

Law, David — Hewlett Packard Enterprise

Comment Type **E** *Comment Status* **X**

Suggest that '... information to and from the FEC.' should read '... information to and from the SC-FEC.'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **O**

Cl **153** SC **153.2.1** P **80** L **50** # 121

Law, David — Hewlett Packard Enterprise

Comment Type **T** *Comment Status* **X**

Can't the sublayer 'above' the SC-FEC also be an Inverse RS-FEC (see Figure 152-1) or a PMA (see Figure 83C-8 as well as Page 81, Line 7)?

SuggestedRemedy

[1] Page 80, line 50 that '... the PCS to ...' should be change to '... the PCS, Inverse RS-FEC, or PMA to ...'.
[2] Page 81, line 7 that '... the PCS or PMA ...' should be change to '... the PCS, Inverse RS-FEC, or PMA ...'.

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.2.3.2.4** *P* **83** *L* **20** # 31

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **X**

No Annex which provides a sample FEC frame is provided like 91A and 119A

SuggestedRemedy

Add an Annex that provides a sample SC-FEC frame

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.2.3.2.4** *P* **83** *L* **43** # 30

Slavick, Jeff — Broadcom

Comment Type **TR** *Comment Status* **X**

Is the pattern supplied sent Left to right or Right to left or first field (sent R to L) followed by 2nd field (sent R to L)

SuggestedRemedy

Add statement to 1) which defines the order the bits are transmitted.

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.2.3.2.4** *P* **83** *L* **51** # 124

Law, David — Hewlett Packard Enterprise

Comment Type **E** *Comment Status* **X**

Suggest that the abbreviations 'GMP OH' used in Figure 153–3 'SC-FEC frame' should be referenced here.

SuggestedRemedy

Suggest the text 'The GMP mapping overhead is encoded ...' should be changed to read 'The GMP mapping overhead (GMP OH) is encoded ...'.

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.2.3.2.4** *P* **84** *L* **9** # 123

Law, David — Hewlett Packard Enterprise

Comment Type **E** *Comment Status* **X**

Subclause 10.5.1 'Citation as a normative reference' of the IEEE-SA Standards Style Manual says 'Note that in-text reference to a specific clause, subclause, table, or figure of another document shall be dated even if the undated version of the document is listed in the normative references.'.

SuggestedRemedy

Please provide a dated reference for '... ITU-T G.709 Clause 19.4.3.2.'

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.2.3.2.4** *P* **85** *L* **13** # 122

Law, David — Hewlett Packard Enterprise

Comment Type **T** *Comment Status* **X**

The middle row of Table 153–1 'Encoding of GMP words in next SC-FEC frame' shows the encoding of 'GMP words' in a 188 GMP word frame when the next frame is 189 GMP word frame.

The text on page 85, lines 13-14 says when the current frame is a 189 GMP word frame, and the next frame is 188 GMP word frame 'This is signaled by inverting all of the even-numbered C bits (C12, C10, C8, C6, C4, C2, C0) from the value in the previous frame, setting the decrement indicator (DI bit) to one, and setting the increment indicator (II bit) to zero.'.

As two consecutive 189 GMP word frames cannot occur (see page 84 line 50-51), the text on page 85, lines 13-14 must be applied to middle row of Table 153–1 as the previous frame has to have been a 189 GMP word frame following a 188 GMP word frame.

If this is the case bit C0 is a '0' in the previous frame and, therefore, if inverted as described by the text on page 85, lines 13-14, there should be a '1' for C0 in the last row or Table 153-1. It's also doesn't seem clear from page 85, lines 13-14 what to do with the odd numbers C bits.

It seems that the C bits in this case are calculated based on the number of words in the next frame, then replacing the even-numbered C bits with the inverse of their value from the previous frame.

SuggestedRemedy

Clarify the description of the C bits if required.

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.2.3.2.4** *P* **85** *L* **46** # 103

Maniloff, Eric — Ciena

Comment Type **T** *Comment Status* **X**

The text reads "whose fill level varies
depending on whether 188 or 189 GMP words are filled in a given SC-FEC frame." should include that the fill level varies with the clock offset of the 100GBASE-R signal.

SuggestedRemedy

Modify text to read "whose fill level varies with the clock offset of the incoming 66B blocks and
depending on whether 188 or 189 GMP words are filled in a given SC-FEC frame."

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.2.3.2.7** *P* **87** *L* **33** # 51

Wienckowski, Natalie — General Motors

Comment Type **E** *Comment Status* **X**

missing "be" verb

SuggestedRemedy

Change: first 16 octets of the FEC frame distributed
To: first 16 octets of the FEC frame are distributed

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.2.3.2.7** *P* **87** *L* **35** # 54

Wienckowski, Natalie — General Motors

Comment Type **E** *Comment Status* **X**

wrong "dash" type

SuggestedRemedy

Change the "En dash" after "NOTE" to an "EM dash"
Also P94L44, P95L30

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.2.3.3.1** *P* **87** *L* **47** # 56

Trowbridge, Steve — Nokia

Comment Type **TR** *Comment Status* **X**

The frame alignment process encounters false loss of lock too frequently, as described in trowbridge_01_200528 presented in the 28 May 2020 interim Task Force Conference call.

SuggestedRemedy

Implement the remedy described in trowbridge_01a_200611 to the 11 June 2020 Interim Task Force call. Note that this remedy includes a change to the Bibliography (Annex A) as well as to clause 153.

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.2.3.3.4** *P* **88** *L* **20** # 115

Law, David — Hewlett Packard Enterprise

Comment Type **E** *Comment Status* **X**

Suggest that '0x1e' should be '0x1E', See figure 82–5.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.2.4.1.1** *P* **89** *L* **15** # 52

Wienckowski, Natalie — General Motors

Comment Type **E** *Comment Status* **X**

inconsistent/incorrect use of true/false & True/False throughout this subclause

SuggestedRemedy

When describing the states of a Boolean variable use "TRUE" and "FALSE".

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.2.4.1.1** *P* **89** *L* **34** # 113

Law, David — Hewlett Packard Enterprise

Comment Type **T** *Comment Status* **X**

Suggest that 'A variable set ...' should read 'A Boolean variable set ...'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.2.4.1.1** *P* **90** *L* **13** # 112

Law, David — Hewlett Packard Enterprise

Comment Type **E** *Comment Status* **X**

Booolean ...' should read 'Boolean ...'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.2.4.4** *P* **91** *L* **7** # 116

Law, David — Hewlett Packard Enterprise

Comment Type **T** *Comment Status* **X**

States COUNT_2 and COUNT_NEXT in Figure 153–7 'SC-FEC synchronization state diagram' include the action 'start fas_counter'. Subclause 153.2.4 'Detailed functions and state diagrams' states that 'The notation used in the state diagrams follows the conventions of 21.5. The notation ++ after a counter or integer variable indicates that its value is to be incremented.'. Neither this subclause, nor the referenced subclause 21.5, defines a start action for a counter, and what it means.

SuggestedRemedy

Change 'start fas_counter' to read 'fas_counter <= 0' in both the States COUNT_2 and COUNT_NEXT states.

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.2.4.4** *P* **91** *L* **27** # 117

Law, David — Hewlett Packard Enterprise

Comment Type **E** *Comment Status* **X**

Typo, the assignment '... <= current_fecll' in state COUNT_NEXT of Figure 153–7 should read '... <= current_fecl'.

SuggestedRemedy

See comment.

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.2.4.4** *P* **91** *L* **41** # 118

Law, David — Hewlett Packard Enterprise

Comment Type **T** *Comment Status* **X**

The variable FEC_lane_mapping<x> assigned the value fec_lane in the state 2_GOOD of Figure 153–7 is not defined in subclause 153.2.4.1.1 'Variables'.

SuggestedRemedy

Add a definition of the variable FEC_lane_mapping<x> to subclause 153.2.4.1.1 'Variables'.

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.2.32.4** *P* **84** *L* **16** # 48

Wienckowski, Natalie — General Motors

Comment Type **E** *Comment Status* **X**

missing spaces

SuggestedRemedy

Change: 255/227
To: 255 / 227

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.2.32.4** *P* **86** *L* **3** # 49

Wienckowski, Natalie — General Motors

Comment Type **T** *Comment Status* **X**

math error. If this is not a math error, please explain how 3 can be the correct answer.

SuggestedRemedy

Change: 75 + 12 - 80 = 3
To: 75 + 12 - 80 = 7

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.2.32.4** *P* **86** *L* **29** # 50

Wienckowski, Natalie — General Motors

Comment Type **E** *Comment Status* **X**

missing spaces

SuggestedRemedy

Change: 512×510
To: 512 × 510

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.3.1** *P* **93** *L* **49** # 53

Wienckowski, Natalie — General Motors

Comment Type **E** *Comment Status* **X**

missing spaces

SuggestedRemedy

Change: 255/227
To: 255 / 227
Also on line P93L51, P94L38, P94L53, P95L24

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.3.2.3.1** *P* **95** *L* **24** # 59

Trowbridge, Steve — Nokia

Comment Type **E** *Comment Status* **X**

The encoder (clause 153.3.2.2.2) does the math and gives a number (not just a formula) for the top-line baud rate, but the equivalent decoder section does not.

SuggestedRemedy

Add the approximate top-line baud rate (~27.9525 GBd) after the formula.

Proposed Response *Response Status* **O**

Cl **153** *SC* **153.3.2.3.2** *P* **95** *L* **34** # 102

Maki, Jeffery — Juniper Networks

Comment Type **ER** *Comment Status* **X**

Sub-clause is self referencing. Reference to 153.3.2.3.2 is erroneous.

SuggestedRemedy

Replace 153.3.2.3.2 with 153.3.2.2.2.

Proposed Response *Response Status* **O**

Cl **154** *SC* **.2** *P* **101** *L* **28** # 111

John, DeAndrea — Finisar / II-VI

Comment Type **E** *Comment Status* **X**

The black lenj with amplifiers will result in power levels greater than -30 dBm at TP3. See contribution "deandrea_3ct_01 June 11 2020 Rev 0.4.pdf"

SuggestedRemedy

Add addtioanl statement in the note: " Black links with optical amplifiers will result in average power exceeding -30 dBm when transmit is in the "OFF" state, a implimentations should take this condition into account"

Proposed Response *Response Status* **O**

Cl **154** *SC* **5.4** *P* **104** *L* **43** # 110

John, DeAndrea — Finisar / II-VI

Comment Type **T** *Comment Status* **X**

The use of optical amplifiers ion the black link create addtional noise conditions for this PMD type.

SuggestedRemedy

Add the following to the note ", optical amplifier noise in the Black Link, etc."

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.1** *P* **99** *L* **7** # 92

Dambrosia, John — Futurewei, A U.S. Subsidiary of Huawei

Comment Type **E** *Comment Status* **X**

Wording can be improved.

SuggestedRemedy

This clause specifies the 100GBASE-ZR PMD together with the associated medium, which is a single-mode fiber based DWDM channel which may contain one or more optical amplifiers and is.described in the form of a black link (see 154.6).

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.1** *P* **99** *L* **8** # 82

Dambrosia, John — Futurewei, A U.S. Subsidiary of Huawei

Comment Type **ER** *Comment Status* **X**

The term "coherent" only appears 2x in D2.0 of P802.3ct, its use in this sentence is not helpful -
"The optical signal generated by this PMD type is modulated using a dual polarization differential quadrature phase shift keying (DP-DQPSK) format suitable for reception by a coherent optical
receiver."

SuggestedRemedy

Replace this sentence with
The optical signal generated by this PMD type is modulated using a dual polarization differential quadrature phase shift keying (DP-DQPSK) format.

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.2** *P* **101** *L* **15** # 60

Trowbridge, Steve — Nokia

Comment Type **E** *Comment Status* **X**

The number cited (27.9525 Gbd) is not an exact nominal value. Same issue in the next paragraph.

SuggestedRemedy

The corresponding PMA clause uses the exact formula and an approximate nominal: (255/227)x24.8832 Gbd (~27.9525 Gbd).

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.5.4** *P* **104** *L* **32** # 79

Schmitt, Matt — CableLabs

Comment Type **T** *Comment Status* **X**

Table 154-5 sets a requirement that if the Average optical power at TP3 is less than or equal to -30 dBm, the SIGNAL_DETECT value must be set to FAIL. Since that is the same as the required lower threshold for receiver sensitivity, there is no margin for any inaccuracies in the receiver power meter. Further, it prohibits a receiver from exceeding the requirement for sensitivity, since all values less than -30 dBm must be marked as FAIL, even if the receiver can decode them successfully. Setting this value lower will provide some margin and permit implementations that exceed the minimum requirement.

SuggestedRemedy

In the first row of Table 154-5, change "-30 dBm" to "-32 dBm".

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.5.4** *P* **104** *L* **32** # 104

Maniloff, Eric — Ciena

Comment Type **T** *Comment Status* **X**

For the OSNR allowed by this specification, the integrated noise power after the demux may be only ~7dB lower than the signal power. As such a note in Table 154-5 indicating that SIGNAL_DETECT may not be a reliable indicator of the optical signal if average power detection is used should be added.

SuggestedRemedy

Add note to Table 154-5 indicating "For amplified systems using average power for Signal Detect, the Signal Detect value may not indicate FAIL when the Optical Signal is below its specified threshold in Table 154-9"

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.5.4** *P* **104** *L* **32** # 69

Stassar, Peter Huawei

Comment Type **T** *Comment Status* **X**

The signal_detect level of -30 dBm at TP3 is too low in the presence of optical noise (ASE) due to the presence of one (or more) optical amplifier(s) inside the black link. In order to get a sufficiently reliable signal_detect level in the case of amplified operation, this threshold should be increased to -23 dBm, which is still sufficiently below the Minimum average input power [amplified] of -16 dBm specified for the amplified operation. On the other hand for unamplified operation, being a side application supported by this specification, a signal_detect level of -30 dBm is right on the level of Minimum average input power [unamplified] of -30 dBm and therefore too high for the unamplified operation. Defining a single signal_detect level appropriate for both amplified and unamplified operation is therefore not possible. Because the amplified operation is the "normative" application consistent with the agreed objective of 80 km, this specification needs to focus on that application. A suitable signal_detect in an unamplified application should be addressed in a note.

SuggestedRemedy

In Table 154-5 modify the signal_detect level of -30 dBm to -23 dBm and adress unamplified operation in a Note, with content TBD, pending further discussion

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.5.4** *P* **104** *L* **32** # 105

Maniloff, Eric Ciena

Comment Type **T** *Comment Status* **X**

Rather than Optical Power the Receive Condition should refer to Signal Power

SuggestedRemedy

Change "Average Optical" to "Optical signal"

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.5.4** *P* **104** *L* **43** # 80

Schmitt, Matt CableLabs

Comment Type **T** *Comment Status* **X**

As pointed out in deandrea_3ct_01_200611, when an optical amplifier (EDFA) is a part of the black link, the noise floor could be amplified above the power threshold for signal detect. To account for that, while not mandatory, an implementer may wish to consider the presence of a valid 100GBASE-R signal in determining whether or not to set the SIGNAL_DETECT value to OK. Some additional text to point that out could be helpful for implementers.

SuggestedRemedy

At the end of the 3rd paragraph in 154.5.4, add an additional sentence that reads: "In addition, as the presence of optical amplifiers in the black link could raise the noise floor above the value of minimum average input power [unamplified] in Table 154-9, implementations may wish to consider the presenece of a compliant 100GBASE-R signal in determining the setting of the SIGNAL_DETECT value.

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.6** *P* **105** *L* **36** # 98

Lewis, David Lumentum

Comment Type **E** *Comment Status* **X**

The formatting of text in 154.6 and 154.7 appears different to the other clauses. Perhaps tighter line spacing or a different font size.

SuggestedRemedy

Check and change the style to match the rest of the clause.

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.6** *P* **105** *L* **36** # 94

Dambrosia, John — Futurewei, A U.S. Subsidiary of Huawei

Comment Type **E** *Comment Status* **X**

This setence does not adequately describe the operation of the 100GBASE-ZR PMD -
This subclause provides details of the medium associated with the 100GBASE-ZR PMD, over which the PHY operates at a single optical frequency (often also referred to by its associated wavelength) on a defined frequency grid.
GIven the differences between 100GBASE-ZR and 400GBASE-ZR in respect to the channel spacing, this should be clearly called out.

SuggestedRemedy

Replace sentence -
This subclause provides details of the medium associated with the 100GBASE-ZR PMD, over which the PHY operates at a single optical frequency (often also referred to by its associated wavelength) on a defined frequency grid.
With
This subclause provides details of the medium associated with the 100GBASE-ZR PMD, over which the PHY operates at a single optical frequency (often also referred to by its associated wavelength) on a defined frequency grid consisting of 48 channels based on a 100 GHz center channel spacing specified in Table 154-6.

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.6** *P* **105** *L* **38** # 96

Dambrosia, John — Futurewei, A U.S. Subsidiary of Huawei

Comment Type **TR** *Comment Status* **X**

The use of the term "channel" in IEEE 802.3 can be confusing to some based on their point of reference, as it sometimes refer to the medium between the Tx and Rx. In the case of P802.3ct, it is used to describe both the medium between the tx and rx, as well as in reference to the frequency of the optical wavelength (i.e. channel index number, channel center frquency, approximate channel center wevelength).

SuggestedRemedy

change
The medium associated with the 100GBASE-ZR PMD is also referred to as a DWDM channel
which is defined as the transmission path over a single wavelength/frequency on a defined frequency
grid between a DWDM PHY transmitting to another DWDM PHY.
To
The medium associated with the 100GBASE-ZR PMD is also referred to as a DWDM channel
which is defined as the transmission path over a single wavelength/frequency (referred to either by Channel Index Number or Channel Center Frequency) on a defined frequency grid between a DWDM PHY transmitting to another DWDM PHY.

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.6** *P* **105** *L* **39** # 97

Dambrosia, John — Futurewei, A U.S. Subsidiary of Huawei

Comment Type **TR** *Comment Status* **X**

The definition in the body of the text for DWDM Channel is
"the transmission path over a single wavelength/frequency on a defined frequency grid between a DWDM PHY transmitting to another DWDM PHY."
This does not match the definition in 1.5.237a.

SuggestedRemedy

Replace definition in 1.4.237a with the noted definition that was in the body of the text.

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.6** *P* **106** *L* **8** # 12

Laubach, Mark — Self

Comment Type **E** *Comment Status* **X**

The grey shaded box in Figure 154–3 is confusing. Should be removed, less grey, and/or labeled as "black link"?

SuggestedRemedy

Editor's choice to amend for clarity.

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.6** *P* **106** *L* **31** # 95

Dambrosia, John — Futurewei, A U.S. Subsidiary of Huawei

Comment Type **TR** *Comment Status* **X**

There is no requirement for a 100GBASE-ZR PHY to support all 48 channels. Additionally, it is not noted that a user needs to configure a 100GBASE-ZR Tx with a 100GBASE-ZR Rx, which support the same channnel index numbers.

SuggestedRemedy

Add sentence at end of paragraph -
A 100GBASE-ZR PHY implementation may support 1 to 48 channel frequencies over a DWDM system. Configuration of a DWDM link with a 100GBASE-ZR Tx and Rx to support the same channel freuency is necessary.

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.6** *P* **107** *L* **32** # 13

Laubach, Mark — Self

Comment Type **E** *Comment Status* **X**

Missing cross reference

SuggestedRemedy

Both occurences of "Table 154-6" in this paragraph should be a cross reference.

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.7** *P* **107** *L* # 68

Stassar, Peter — Huawei

Comment Type **ER** *Comment Status* **X**

Several of the parameter namings are not consistent with previously used conventions and should therefore be modified. This has already been discussed during the TF interim teleconference meeting on 11 June 2020 as shown in http://www.ieee802.org/3/cw/public/tf_interim/20_0611/stassar_3cw_01_200611.pdf. In this context it is strongly desirable to use consistent naming between 100GBASE-ZR and 400GBASE-ZR draft specifications

SuggestedRemedy

Implement the changes as proposed in http://www.ieee802.org/3/cw/public/tf_interim/20_0611/stassar_3cw_01_200611.pdf, except "Average receive power [amplified] (max)" which should be "Average receive power [amplified] (min)"

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.7.1** *P* **108** *L* **24** # 106

Maniloff, Eric — Ciena

Comment Type **E** *Comment Status* **X**

1000 kHz = 1 MHz

SuggestedRemedy

Replace 1000 kHz with 1 MHz

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.7.1** *P* **108** *L* **31** # 141

Dawe, Piers — Nvidia

Comment Type **T** *Comment Status* **X**

An EVM limit is like 802.3cd's clumsily named TDECQ-10.log10(Ceq), which is sometimes called K. It's a good thing to have but with a 7-spaced T-spaced equalizer, remarkably slow signals are possible that cause a large noise enhancement penalty. Has this been investigated and bounded?
Do you want to require all transmitters or receivers that work in practice with reasonable transmitter speeds to carry the burden of having to work with such super-slow but EVM-compliant signals?

SuggestedRemedy

Consider adding the equivalent of a TDECQ limit in the EVM method. Consider an average power - TDECQ substitute if the range of good to bad is very large.

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.7.1** *P* **108** *L* **33** # 17

Issenhuth, Tom — Huawei

Comment Type **E** *Comment Status* **X**

The placement of the "a" footnote marker is incorrect

SuggestedRemedy

Move the location of the footnote marker to after (193.6).

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.7.1** *P* **108** *L* **33** # 107

Maniloff, Eric — Ciena

Comment Type **E** *Comment Status* **X**

OSNR Units should be dB / .1nm

SuggestedRemedy

change unit column to dB (0.1nm)

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.7.1** *P* **108** *L* **38** # 108

Maniloff, Eric — Ciena

Comment Type **T** *Comment Status* **X**

Note a applies to both amplified and unamplified systems. For design of the black link, it is necessary to know the input signal power and OSNR in order to ensure the Rx OSNR requirement is met.

SuggestedRemedy

Remove footnote a entirely.

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.7.3** *P* **109** *L* **44** # 109

Maniloff, Eric — Ciena

Comment Type **T** *Comment Status* **X**

S_0 often refers to the Slope of the Chromatic Dispersion at the Zero Dispersion Wavelength. I believe this parameter refers to the minimum dispersion in the opersting wavelength range. Also, "Fiber dispersion" doesn't align with other specs for chromatic dispersion.

SuggestedRemedy

Change Description to "Minimum chromatic dispersion slope in operating wavelength range"

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.8.16** *P* **112** *L* **46** # 140

Dawe, Piers — Nvidia

Comment Type **TR** *Comment Status* **X**

While G.698.2 gives the concept of receiver OSNR tolerance and says what's in and what's out, it is normal in Ethernet optical PMD specifications to have a more specific definition "Stressed receiver sensitivity" to avoid ambiguity and give an example of how one might actually assure that a receiver complies. I don't see why this PMD should not need it too. Writing the stressed receiver sensitivity section can be painful because it makes one clarify what one means - it's where the rubber hits the road.

SuggestedRemedy

Add a stressed receiver sensitivity section, following other clauses

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.8.16** *P* **112** *L* **48** # 136

Dawe, Piers — Nvidia

Comment Type **E** *Comment Status* **X**

this Clause

SuggestedRemedy

this clause

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.8.21** *P* **113** *L* **18** # 135

Dawe, Piers — Nvidia

Comment Type **E** *Comment Status* **X**

Is there a reason that this sentence is in italics?

SuggestedRemedy

Update sentence if necessary; change to upright

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.8.21** *P* **113** *L* **18** # 14

Laubach, Mark — Self

Comment Type **E** *Comment Status* **X**

Text is mis-formatted as italic.

SuggestedRemedy

Change to regular, non-italic text.

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.8.21** *P* **113** *L* **18** # 99

Lewis, David — Lumentum

Comment Type **E** *Comment Status* **X**

The font is in italics.

SuggestedRemedy

Change to the same style as other sub-clauses.

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.9.1** *P* **113** *L* **25** # 78

Grow, Bob — RMG Consulting

Comment Type **E** *Comment Status* **X**

This text differs from P802.3cr, 150.9.1.

SuggestedRemedy

Replace sentence with; "All equipment subject to this clause shall conform to J.2."

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.10** *P* **114** *L* **43** # 23

Issenhuth, Tom — Huawei

Comment Type **E** *Comment Status* **X**

IEC 61753-1-1 has been withdrawn and superseeded by IEC 61753-1 Edition 2.0 August 1, 2018

SuggestedRemedy

Change to IEC 61753-1

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.11.4.2** *P* **117** *L* **26** # 55

Wienckowski, Natalie — General Motors

Comment Type **E** *Comment Status* **X**

Wrong support options for a Mandatory item for an optional feature. In this case the choices should be Yes and N/A.

SuggestedRemedy

Change: No
To: N/A
Also P118L7

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.11.4.3** *P* **118** *L* **6** # 16

Issenhuth, Tom — Huawei

Comment Type **E** *Comment Status* **X**

The table is for "PMD to MDI optical specifications for 100GBASE-ZR" but the entries are duplicates of the first 2 lines of the previous table

SuggestedRemedy

Modify the table to include the proposed values per D1.2 comment 125.

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.11.4.6** *P* **119** *L* **1** # 128

Dawe, Piers — Nvidia

Comment Type **E** *Comment Status* **X**

Blank Link

SuggestedRemedy

black link
Also, to match the rest of the document, Black Link requirements should be Black link requirements

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.11.4.6** *P* **119** *L* **8** # 24

Issenhuth, Tom — Huawei

Comment Type **E** *Comment Status* **X**

IEC 61753-1-1 has been withdrawn and superseeded by IEC 61753-1 Edition 2.0 August 1, 2018

SuggestedRemedy

Change to IEC 61753-1

Proposed Response *Response Status* **O**

Cl **154** *SC* **154.11.4.6** *P* **119** *L* **9** # 100

Lewis, David — Lumentum

Comment Type **T** *Comment Status* **X**

Item OC2 references IEC 61753-1-1, which has been withdrawn and replaced by IEC 61753-1: 2018.

SuggestedRemedy

Change the first reference to IEC 61753-1.

Proposed Response *Response Status* **O**