

Proposed Responses

IEEE P802.3cs D3.0 SuperPON Task Force Initial Sponsor ballot comments

CI **FM** SC **FM** P1 L1 # I-3
Hajduczenia, Marek Charter Communications
Comment Type **G** Comment Status **D**
MEC comment: update copyright year to 2022
SuggestedRemedy
Per comment
Proposed Response Response Status **W**
PROPOSED ACCEPT.

CI **FM** SC **FM** P3 L1 # I-28
Dawe, Piers J G NVIDIA
Comment Type **E** Comment Status **D** abstract
Take the newsy, advertising, descriptive and commercial words out of the abstract.
"optical reach" is not defined.
Here is a suggested modification. This could be used for the description on page 13 if they are to be the same.
SuggestedRemedy
This amendment to IEEE Std 802.3-202x defines Super-PON optical subscriber access networks, in the family of Ethernet passive optical networks (EPONs). Super-PON has a reach of up to 50 km and up to 1024 ONUs over a point-to-multipoint passive optical distribution network (ODN) through wavelength division multiplexing (WDM). A Super-PON optical distribution network (ODN) contains a passive wavelength router that determines the channels used by the ODN. This standard specifies the Super-PON Reconciliation Sublayer (RS), Physical Coding Sublayer (PCS), Physical Media Attachment (PMA) sublayer, and Physical Medium Dependent (PMD) sublayer at a MAC data rate of 10 Gb/s in the downstream direction and of 10 Gb/s or 2.5 Gb/s in the upstream direction.
Proposed Response Response Status **W**
PROPOSED ACCEPT IN PRINCIPLE.
Changes applied per comment + used the same text on page 13, line 3, where 802.3cs amendment is used.

CI **FM** SC **FM** P11 L3 # I-27
Dawe, Piers J G NVIDIA
Comment Type **E** Comment Status **D**
Amendment:
SuggestedRemedy
Amendment 3:
Proposed Response Response Status **W**
PROPOSED ACCEPT.

CI **FM** SC **FM** P13 L3 # I-29
Dawe, Piers J G NVIDIA
Comment Type **E** Comment Status **D** abstract
This description of this amendment seems much longer than others, with more advertising and descriptive material. This is a standard: "customer" doesn't come into it. "optical reach" is not defined.
SuggestedRemedy
Condense this text to about half the length. Take out words such as expanded, customer and subscribers. Avoid "optical reach" unless the term is defined somewhere. See the suggestion for the abstract on page 3.
Proposed Response Response Status **W**
PROPOSED ACCEPT IN PRINCIPLE.
See comment #I-28 for the resolution

CI **FM** SC **FM** P20 L20 # I-2
Hajduczenia, Marek Charter Communications
Comment Type **G** Comment Status **D**
MEC comment: The text of "IMPORTANT NOTICE" paragraph can be removed. It is included in the latest boilerplate information.
SuggestedRemedy
Change per comment
Proposed Response Response Status **W**
PROPOSED ACCEPT.

CI **0** SC **0** P37 L # I-21
DeSanti, Claudio Dell
Comment Type **E** Comment Status **D**
In Figure 56-7a the "Black link" box should be "Super-PON Black link"
SuggestedRemedy
Change "Black link" to "Super-PON Black link"
Proposed Response Response Status **W**
PROPOSED ACCEPT.

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Cl 1 **SC 1.4** **P21** **L 38** # **I-18**

Ran, Adeel Cisco Systems, Inc.

Comment Type GR **Comment Status D**

The term Multipoint MAC Control and the abbreviation MPMC now appear in multiple clauses, but do not have definitions in clause 1.

SuggestedRemedy

In 1.4, add a definition of Multipoint MAC Control with reference to the relevant clauses (I assume clause 144 and 164.5).

In 1.4, add expansion of the abbreviation MPMC.

Proposed Response **Response Status W**

PROPOSED ACCEPT IN PRINCIPLE.

Added acronym to abbreviations in section 1.5 as MPMC multipoint mac control

Cl 1 **SC 1.4.543a** **P21** **L 45** # **I-30**

Dawe, Piers J G NVIDIA

Comment Type E **Comment Status D**

"PMDs that address networks": eh?

SuggestedRemedy

Change "PMDs that address" to ""PMDs for"?

Proposed Response **Response Status W**

PROPOSED ACCEPT.

Cl 30 **SC 30.5.1.1.2** **P24** **L 13** # **I-24**

Grow, Robert RMG Consulting

Comment Type E **Comment Status D**

Burst mode or burst-mode? The document is inconsistent. (P802.3 is aiming to make hyphenation consistent for "common-mode" and "differential-mode" neither of which I find in this document.) The hyphenated "burst-mode" is used in clauses 65 and 144 but "burst mode" is used in clauses: 4, 30, 60, 65, 75, 76, 100, 101, 141, 142, 148, and annexes 58A, 75A.

SuggestedRemedy

Absent a clear P802.3 usage, at least make P802.3cs consistent. Perhaps "burst mode" because of its dominance in 802.3.

Proposed Response **Response Status W**

PROPOSED REJECT.

The usage is consistent, i.e., "burst-mode" is a compound adjective and hyphenated. When used as a noun with adjective (e.g., operates in burst mode), it does not need a hyphen.

Cl 45 **SC 45.2.1.27.1a** **P25** **L 38** # **I-31**

Dawe, Piers J G NVIDIA

Comment Type E **Comment Status D**

45.2.1.27.1

SuggestedRemedy

45.2.1.27.1a

Proposed Response **Response Status W**

PROPOSED ACCEPT.

Cl 45 **SC 45.2.1.27.2** **P27** **L 49** # **I-6**

Rannow, R K IEEE member / Self Employed

Comment Type T **Comment Status D**

A PMA/PMD shall ignore writes to the PMA/PMD type selection bits that select PMA/PMD types it has not advertised.

Appears verbose and ambiguous.

SuggestedRemedy

A PMA/PMD shall ignore writes to the PMA/PMD type selection bits that select PMA/PMD types not advertised.

Proposed Response **Response Status W**

PROPOSED ACCEPT.

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Cl 56 SC 56.1 P36 L # I-22

DeSanti, Claudio

Dell

Comment Type E Comment Status D

Verify the figure references in 56.1. The current text in 802.3 is:

"The relationships between these EFM elements and the ISO/IEC Open System Interconnection (OSI) reference model are shown in Figure 56–1 and Figure 56–2 for point-to-point topologies, Figure 56–3 for 1G-EPON topologies, Figure 56–4 for 10/10G-EPON topologies, Figure 56–5 for 10/1G-EPON topologies, Figure 56–6 for EPoC topologies, and Figure 56–7 for Nx25G-EPON topologies."

SuggestedRemedy

Update the references to figures as needed.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Changed page 36, line 12 from "Figure 56–5a" to "Figure 56–7"

Cl 56 SC 56.1.2 P36 L33 # I-32

Dawe, Piers J G

NVIDIA

Comment Type E Comment Status D

Take out the newsy, advertising and commercial words. This is not necessarily the only amplified WDM PON in the world. "optical reach" is not defined.

SuggestedRemedy

Change:
Super-PON (i.e., amplified WDM PON) with a nominal MAC data rate of 10 Gb/s in the downstream direction and 10 Gb/s or 2.5 Gb/s in the upstream direction. Super-PON supports an increased optical reach of up to 50 km and an expanded customer coverage of up to 1024 subscribers over a point-to-multipoint passive optical distribution network (ODN) through wavelength division multiplexing (WDM). The Super-PON PMA and PCS sublayers are specified in Clause 164.
to
Super-PON (an amplified WDM PON) with a nominal MAC data rate of 10 Gb/s in the downstream direction and 10 Gb/s or 2.5 Gb/s in the upstream direction, with a reach of up to 50 km and up to 1024 ONUs over a point-to-multipoint passive optical distribution network (ODN) using wavelength division multiplexing (WDM). The Super-PON PMA and PCS sublayers are specified in Clause 164.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 56 SC 56.1.2.1. P36 L # I-23

DeSanti, Claudio

Dell

Comment Type E Comment Status D

Verify the figure references in 56.1.2.1. The current text in 802.3 is:

"Every P2MP ODN topology consists of one Optical Line Terminal (OLT) and one or more ONUs, as shown in Figure 56–3, Figure 56–4, Figure 56–5, and Figure 56–7 for 1G-EPON, 10/10G-EPON, 10/1G-EPON, and Nx25G-EPON, respectively. One of several instances of the MPCP in the OLT communicates with the instance of the MPCP in the ONU. A pair of MPCPs that communicate between the OLT and ONU are a distinct and associated pair."

SuggestedRemedy

Update the references to figures as needed.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Changed page 36, line 50 from "Figure56–5a, and Figure56-5b" to "Figure56–5, and Figure56–7"

Cl 164 SC 164 P41 L3 # I-17

Ran, Adeo

Cisco Systems, Inc.

Comment Type TR Comment Status D

The title of clause 164 suggests that it is limited to Physical layers and management parameters, but the content includes the MPMC which is within the data link layer (as shown in Figure 164-2, Figure 164–5, and Figure 164–11).

SuggestedRemedy

Change the title from "Physical Layers and management parameters for increased-reach point-to-multipoint Ethernet optical subscriber access (Super-PON)" to "Physical Layers, Multipoint MAC Control and management parameters for increased-reach point-to-multipoint Ethernet optical subscriber access (Super-PON)".

In the first sentence of 164.1 change "a set of physical layer specifications and management parameters" to "a set of specifications for physical layers, Multipoint MAC Control sublayer, and management parameters".

Proposed Response Response Status W

PROPOSED ACCEPT.

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Cl 164 **SC 164.1** **P43** **L 51** # **I-19**

Ran, Adeo Cisco Systems, Inc.

Comment Type E **Comment Status D**

In the legend of Figure 164-2, "MULTI-POINT" appears with a dash, although in 164.5 (and in clause 144, and elsewhere) it is "multipoint".
Similarly in Figures 164-5, 164-8, 164-11, and 56-7a.

SuggestedRemedy
Delete the dash in the legend of all 5 figures.

Proposed Response **Response Status W**
PROPOSED ACCEPT.

Cl 164 **SC 164.2.1.1** **P43** **L 46** # **I-20**

Ran, Adeo Cisco Systems, Inc.

Comment Type ER **Comment Status D**

Figure 164-2 has a hatched box above the legend with a nearby label saying "PMD described in 164.2". This label seems to be related to the hatched block denoting the PMD sublayer in the diagram, but it is not the PMD sublayer itself.

Such boxes are not typically included in similar diagrams across the standard; the location of the subclause in question is sufficiently emphasized by the hatch pattern in the block within diagram. The additional box near the legend is redundant and confusing.

The hatch pattern could be improved, as in Figure 164-7.

Similarly in Figure 164-5 and Figure 164-11 (where the label has "MPCP" instead of "MPMC", adding more confusion).

SuggestedRemedy
Delete the hatched box above the legend and the adjacent label.
Consider highlighting the PMD blocks in the diagrams as done in Figure 164-7.

Apply similar changes in Figure 164-5 and Figure 164-11, highlighting the relevant sublayer blocks in each case (in Figure 164-11 these are the MPMC blocks, since there is no "MPCP" block).

Proposed Response **Response Status W**
PROPOSED REJECT.

The hatched box is used in the baseline standard document. No changes to the draft needed.

Cl 164 **SC 164.2.4.1.1** **P44** **L 41** # **I-8**

Ran, Adeo Cisco Systems, Inc.

Comment Type E **Comment Status D**

The hierarchy of "Delay constraints" subclause below "PMD service interface" is odd, as it is not part of the service interface, and arguably not part of the PMD functional specifications either. It makes it difficult to find the delay constraints in the bookmarks.

The suggested remedy is to place it after 164.2.4 "PMD functional specifications", which would become 164.2.5. Other locations are possible, if the hierarchy makes sense.

SuggestedRemedy
Promote 164.2.4.1.1 "Delay constraints" upper in the hierarchy to 164.2.5, and rename it "PMD delay constraints".

Proposed Response **Response Status W**
PROPOSED ACCEPT.

Cl 164 **SC 164.2.4.1.1** **P44** **L 43** # **I-7**

Ran, Adeo Cisco Systems, Inc.

Comment Type T **Comment Status D**

EQT is not an obvious term. It would help clarity if EQT was followed by a reference to its definition, "(see 1.4.313)", as done in 141.3.1.2.

SuggestedRemedy
Append "(see 1.4.313)".

Proposed Response **Response Status W**
PROPOSED ACCEPT.

Cl 164 **SC 164.2.4.2** **P46** **L 24** # **I-33**

Dawe, Piers J G NVIDIA

Comment Type E **Comment Status D**

Super-PON PMD Test Points

SuggestedRemedy
Super-PON PMD test points
Scrub the document for any more rogue capitals

Proposed Response **Response Status W**
PROPOSED ACCEPT.

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CI 164 SC 164.2.6.1 P48 L46 # I-34

Dawe, Piers J G NVIDIA

Comment Type E Comment Status D

Many table cells seem to have too little left or right white space margin.

SuggestedRemedy

Check the white space margin is correct, widen columns as appropriate.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 164 SC 164.2.6.2 P49 L37 # I-9

Ran, Adeo Cisco Systems, Inc.

Comment Type TR Comment Status D

For "Receiver OSNR tolerance" and "Minimum OSNR", dB (0.1 nm) is not a standard unit and its meaning is not clear.

The table footnote b clarifies that 0.1 nm is the wavelength range for the measurement, so it's part of the definition of the parameter, not a unit.

The unit should be "dB" for these rows.

Also in 164.2.8, Table 164–8.

SuggestedRemedy

In Table 164–6 and in Table 164–8, for both "Receiver OSNR tolerance" and "Minimum OSNR", change unit to "dB".

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 164 SC 164.2.7.1 P50 L17 # I-25

Grow, Robert RMG Consulting

Comment Type E Comment Status D

Side mode or side-mode? The document is inconsistent. Though P802.3 is inconsistent, SMSR side mode suppression ratio is what appears in 1.5.

SuggestedRemedy

Use side mode throughout. (Also p. 52, I. 36.)

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 164 SC 164.2.7.1 P50 L23 # I-10

Ran, Adeo Cisco Systems, Inc.

Comment Type E Comment Status D

Values for TDP in Table 164–7 are placed in different vertical alignment.

SuggestedRemedy

Format the table cells so that the values align.

Proposed Response Response Status W

PROPOSED REJECT.

This is intentional formatting. The value of 2.0 applies to "for -600 to +50 ps/nm residual CD," and value of 1.0 applies to "for -600 to +1020 ps/nm residual CD".
No changes to the draft needed.

CI 164 SC 164.2.9 P52 L36 # I-13

Ran, Adeo Cisco Systems, Inc.

Comment Type T Comment Status X

This is a general comment on optical parameters: in most cases the parameters are defined with no difference between 10 Gb/s and 2.5 Gb/s (which both appear in Table 164–10) with references to clause 52. I have specific comments on two places where the signaling rate should affect the measurements; I suspect that there are other places where distinction should be made.

SuggestedRemedy

Consider any required exceptions for 2.5G transmitters and receivers in 164.2.9 and its subclauses.

Proposed Response Response Status O

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CI 164 SC 164.2.9.6 P53 L11 # I-11

Ran, Adeo Cisco Systems, Inc.

Comment Type TR Comment Status D

The reference for RIN15OMA is 88.8.7.

Looking at 88.8.7, it refers back to 52.9.6 with a few exceptions related to the data rate being 25.78125 Gbd and for multi-lane PMDs. These exceptions do not apply to clause 164. The reader needs to go to 52.9.6 anyway for the full definitions.

Unless there is a reason I'm missing, 52.9.6 would be a better reference.

Also, the filter bandwidth for each mode should be specified.

SuggestedRemedy

Change from "See 88.8.7, with exception of the optical return loss value of 15 dB" to "RIN is defined by the measurement methodology of 52.9.6, with an optical return loss value of 15 dB. The measurement filter bandwidth is appropriately equal to the signaling rate (i.e., 10.3 GHz for 10 Gb/s and 2.6 GHz for 2.5 Gb/s)".

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 164 SC 164.2.9.7 P53 L17 # I-12

Ran, Adeo Cisco Systems, Inc.

Comment Type TR Comment Status D

"... and the test method shall be according to 158.8.7 for 10G signal, and according to 158.8.7 with bandwidth of scope filter response and jitter corner frequency of CRU at 1/4 those for 10G."

This phrasing is difficult to understand. Does the second part of the quoted sentence refer to 2.5G?

Also, 158.8.7 already refers to Figure 86–4, so there is no need to point to it again.

Also, the "shall" should not be on the test mode but on the result - as in 158.8.7: "The transmitter optical waveform of a port transmitting the test pattern specified in Table 158–11 shall meet specifications...".

SuggestedRemedy

Change the text from

"The required transmitter pulse shape characteristics for Super-PON PMDs are specified in the form of a mask of the transmitter eye diagram as shown in Figure 86–4 and the test method shall be according to 158.8.7 for 10G signal, and according to 158.8.7 with bandwidth of scope filter response and jitter corner frequency of CRU at 1/4 those for 10G" to

"The transmitter pulse shape characteristics for Super-PON PMDs at 10G shall meet the specifications of 158.8.7. For 2.5G PMDs the specifications are similar, except for the with bandwidth of scope filter response and the jitter corner frequency of the CRU,, which are 1/4 of the values for 10G".

Change PICS item OM6 accordingly.

Proposed Response Response Status W

PROPOSED ACCEPT.

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CI 164 SC 164.2.9.10 P53 L51 # I-14

Ran, Adeo Cisco Systems, Inc.

Comment Type ER Comment Status D

"Ton is defined in 164.2.9.10.1 and has the value of less than or equal to 256 ns (defined in Table 164-7)"

I assume the value is measured, and it is required to be less than or equal to the limit.

Similarly on L54 and on P54 L11.

SuggestedRemedy

Change "has the value of less than" to "shall be less than" or "is less than", in 3 locations.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 164 SC 164.2.9.11.2 P55 L43 # I-15

Ran, Adeo Cisco Systems, Inc.

Comment Type GR Comment Status D

"Specifically, the Trx_settling time must be met in the following scenarios:"

"must" must not be used.

SuggestedRemedy

Change to "Specifically, the Trx_settling requirement holds in the following scenarios:"

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 164 SC 164.2.9.11.2 P55 L43 # I-26

Grow, Robert RMG Consulting

Comment Type E Comment Status D

The word "must" is deprecated.

SuggestedRemedy

Rewrite to eliminate the word.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Comment resolved through comment #I-15

CI 164 SC 164.2.11.2 P58 L12 # I-16

Ran, Adeo Cisco Systems, Inc.

Comment Type TR Comment Status D

"NOTE—Compliance testing is performed at TP2, TP3, TP6, and TP7 as defined in 164.2.4.2, not at the MDI."

This note is incorrect and misleading - receiver compliance testing is performed at the MDI. TP3 and TP7 are the outputs of the cable plant which coincide with the MDI in a deployed system, but not during receiver tests.

As shown in comment I-60 against 802.3dc D3.0, most of the similar comments in other clauses are specific to the transmitter. The remaining few will likely be corrected in 802.3dc. This clause should align with existing clauses.

SuggestedRemedy

Change to "NOTE—Transmitter compliance testing is performed at TP2 or TP6 as defined in 164.2.4.2, not at the MDI".

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 164 SC 164.3.1.2 P64 L16 # I-5

Rannow, R K IEEE member / Self Employed

Comment Type T Comment Status D

both = and

Multiple instances of the term "both" which is verbose

SuggestedRemedy

Review the use of the term and remove most instances.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Removed all instances of "both" in combination with "and"

Proposed Responses

IEEE P802.3cs D3.0 SuperPON Task Force Initial Sponsor ballot comments

Cl 164 **SC 164.5.1.3** **P79** **L 33** # **I-1**

Hajduczenia, Marek

Charter Communications

Comment Type E **Comment Status D**

MEC comment: format of the note "Note - Super-PON does not use the Channel Control Protocol (CCP) defined for Nx25G-EPON." is not correct

SuggestedRemedy

Fix the NOTE formatting.

Proposed Response **Response Status W**

PROPOSED ACCEPT.

Cl 164A **SC 164A.2.2** **P97** **L 19** # **I-4**

Hajduczenia, Marek

Charter Communications

Comment Type E **Comment Status D**

MEC comment: there are five instances of the term "minimize". Consider changing to "reduce".

All instances are in the informative Annex 164A

SuggestedRemedy

Per comment

Proposed Response **Response Status W**

PROPOSED ACCEPT.

Cl 164B **SC 164B** **P105** **L 6** # **I-35**

Dawe, Piers J G

NVIDIA

Comment Type E **Comment Status D**

As this annex says it's informative...

SuggestedRemedy

Should "Information about cabled fiber link attributes used for system design" be simplified to "Cabled fiber link attributes used for system design"

Proposed Response **Response Status W**

PROPOSED ACCEPT.