Cl **60** *SC* **60.2.2** *P* **2722** *L* **15** # 1

Hajduczenia, Marek Charter

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

802.3ah added inconsistent use of "tx_enable" signal. In the majority of 802.3 standard, it is used as "tx_enable" consistently, excluding 802.3ah-added material

SuggestedRemedy

Replace all 23 instances of "Tx_Enable" (whole words) and 5 instances of "TX_ENABLE" (whole words) with "tx_enable" for consistency

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Changes per comment. Note that two instances of "Tx_Enable" are "Tx_Enable2" in text in 60.9.13.2.2 and 75.7.15.2

Cl **45** *SC* **45.2.2.22** *P* **1933** *L* **50** # 2

Hajduczenia, Marek Charter

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

Incorrect register reference: "indicated by bit 2 in Register 1.1 (see 45.2.1.2.4)." - we're in WIS, we're pointing to PMA/PMD

SuggestedRemedy

Change "indicated by bit 2 in Register 1.1 (see 45.2.1.2.4)." to "indicated by bit 2 in Register 2.1 (see 45.2.2.2.2)."

Response *Response Status* **W**

ACCEPT.

Cl **45** *SC* **45.2.4.30** *P* **2034** *L* **53** # 3

Hajduczenia, Marek Charter

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

Incorrect register reference: "indicated by bit 2 in Register 1.1 (see 45.2.1.2.4)." - we're in PHY XS, we're pointing to PMA/PMD

SuggestedRemedy

Change "indicated by bit 2 in Register 1.1 (see 45.2.1.2.4)." to "indicated by bit 2 in Register 4.1 (see 45.2.4.2.7)."

Response *Response Status* **W**

ACCEPT.

Cl **45** *SC* **45.2.5.30** *P* **2057** *L* **2** # 4

Hajduczenia, Marek Charter

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

Incorrect register reference: "indicated by bit 2 in Register 1.1 (see 45.2.1.2.4)." - we're in DTE XS, we're pointing to PMA/PMD

SuggestedRemedy

Change "indicated by bit 2 in Register 1.1 (see 45.2.1.2.4)." to "indicated by bit 2 in Register 5.1 (see 45.2.5.2.7)."

Response *Response Status* **W**

ACCEPT.

Cl **60** *SC* **60.9.3** *P* **2738** *L* **17** # 5

Hajduczenia, Marek Charter

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

[TIA|ANSI]/EIA-455-95 for optical power measurements - this is currently specific to former 802.3ah/av and older material - 38.6.2, 52.9.3, 53.9.2, 58.7.3, 59.7.3, 60.9.3, 75.7.5, 58.7.3, 59.7.3 and associated PICS. All new material uses IEC 61280-1-1

SuggestedRemedy

Change reference to IEC 61280-1-1, following the comment #206 against P802.3cs. No updates to references (normative / bibliography needed, EIA-455-95 is not there anymore)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

[Editor's note: Page changed from 3278 to 2738.]

In 60.9.3, change: "ANSI/EIA-455-95" to "IEC 61280-1-1".
In 60.12.4.10, item OM3, change: "Per TIA/EIA-455-95" to: "Per IEC 61280-1-1".

Make equivalent changes in Clause 58 and Clause 75.

Additionally, there remains an issue with [TIA|ANSI]/EIA-455-95.
The normative references do not contain 455-95, and Annex A contains "[B9] ANSI/EIA 455-95-1986"
However, there are numerous normative references to [TIA|ANSI]/EIA-455-95, the first being in 38.6.2 "Optical power shall be measured using the methods specified in ANSI/EIA-455-95-1986 [B9]."

Add "ANSI/TIA/EIA-455-95-1986, Absolute Optical Power Test for Optical Fibers and Cables." to 1.3 Normative references.
Delete "[B9] ANSI/EIA 455-95-1986, Absolute Optical Power Test for Optical Fibers and Cables." From Annex A.
Change "ANSI/EIA-455-95-1986 [B9]" to "ANSI/TIA/EIA-455-95" in 38.6.2 and 38.12.4.5 OR4.
Change "TIA/EIA-455-95" to "ANSI/TIA/EIA-455-95" in 52.9.3, 52.15.3.9 OM3, 53.9.2, 53.15.4.5 OM3, and 59.10.3.5 OM4.
Change "ANSI/EIA-455-95" to "ANSI/TIA/EIA-455-95" in 59.7.3.

Cl **120** *SC* **120.5.11.2.2** *P* **4867** *L* **52** # 6

Anslow, Pete IEEE

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

Several variable names in the text of 120.5.11.2.2 and 120.5.11.2.3 do not correctly match the names in Table 120-3.

SuggestedRemedy

In 120.5.11.2.2:
Change 8 instances of "PRBS31Q_enable" to "PRBS31Q_pattern_enable"
Change 1 instance of "PRBS_tx_gen enable" to "PRBS_Tx_gen_enable"
Change 1 instance of "PRBS_rx_gen enable" to "PRBS_Rx_gen_enable"
In 120.5.11.2.3:
Change 1 instance of "SSPRQ_enable" to "SSPRQ_pattern_enable"

Response *Response Status* **W**

ACCEPT.

Cl **141** *SC* **141.10.4.1** *P* **5458** *L* **12** # 7

Anslow, Pete IEEE

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

PICS items FN13a and FN13b have "ONU:M" and "OLT:M" in the Status column, but ONU and OLT are not defined in this PICS.

SuggestedRemedy

Add rows for "*ONU" and "*OLT" in the table in 141.10.3 as per the entries for "*ONU" and "*OLT" in the table in 142.5.3

Response *Response Status* **C**

ACCEPT.

Cl **91** *SC* **91.5.2.9** *P* **3669** *L* **47** # 8

Anslow, Pete IEEE

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

Figure 91-6 contains labels "PMA_UNITDATA_0.request" to "PMA_UNITDATA_3.request" (4 labels).
However, according to 80.3.2, these should be: "PMA:IS_UNITDATA_0.request" to "PMA:IS_UNITDATA_3.request"
Figure 91-7 contains labels "PMA_UNITDATA_0.indication" to "PMA_UNITDATA_3.indication" (4 labels).
However, according to 80.3.2, these should be: "PMA:IS_UNITDATA_0.indication" to "PMA:IS_UNITDATA_3.indication"

SuggestedRemedy

In Figure 91-6 change:
"PMA_UNITDATA_0.request" through "PMA_UNITDATA_3.request" to:
"PMA:IS_UNITDATA_0.request" through "PMA:IS_UNITDATA_3.request".
In Figure 91-7 change:
"PMA_UNITDATA_0.indication" through "PMA_UNITDATA_3.indication" to:
"PMA:IS_UNITDATA_0.indication" through "PMA:IS_UNITDATA_3.indication".

Response *Response Status* **W**

ACCEPT.

Cl **79** *SC* **79.3.2.1** *P* **3327** *L* **26** # 9

Anslow, Pete IEEE

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

In the row for bit 1 in Table 79-4, there is a space missing in "PSEMDI"

SuggestedRemedy

Change "PSEMDI" to "PSE MDI"

Response *Response Status* **C**

ACCEPT.

Cl **98** *SC* **98.6.5** *P* **4061** *L* **6** # 10

Anslow, Pete IEEE

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

Items DME7 and DME8 are now the same (see release notes)

SuggestedRemedy

Delete one of them and renumber the others

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Delete DME8 and renumber DME9-DME11

Cl **129** *SC* **129.7.6.5** *P* **5180** *L* **18** # 11

Anslow, Pete IEEE

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

The Value/Comment field for item LP5 contains "Support additions to for LPI operation". This seems to be missing a figure reference. Since this item is about "Receive state diagrams" in 49.2.13.3, it appears that this should be Figure 49-17.

SuggestedRemedy

Change to: "Support additions to Figure 49-17 for LPI operation".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

"Receive state diagram" is indeed Figure 49-17, but it does not mention "LPI operation". The optional functionality is described as "to support EEE capability".

This also applies to Figure 49-16 mentioned in LP4.

Change LP4 Value/Comment from "Support additions to Figure 49-16 for LPI operation" to "Support additions to Figure 49-16 for EEE capability".

Change LP5 Value/Comment from "Support additions to for LPI operation" to "Support additions to Figure 49-17 for EEE capability".

Cl **104** *SC* **104.6.2** *P* **4378** *L* **8** # 12

Anslow, Pete IEEE

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

This says "The PI for Type E PSEs and PDs shall meet the fault tolerance requirements as specified in 146.8.5." But 146.8.5 is "MDI DC power voltage tolerance" whereas 146.8.6 is "MDI fault tolerance".

SuggestedRemedy

Change:
"The PI for Type E PSEs and PDs shall meet the fault tolerance requirements as specified in 146.8.5." to:
"The PI for Type E PSEs and PDs shall meet the fault tolerance requirements as specified in 146.8.6."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Implement the suggested remedy.

Also add PICS entry in 104.9.4.4:

"COMEL2 | Type E PSE and PD fault tolerance | 104.6.2 | The PI shall meet the fault tolerance requirements as specified in 146.8.6 | PSETE:M PDTA:M | Yes [ ] N/A [ ]"

Cl **00** *SC* **0** *P* *L* # 13

Anslow, Pete IEEE

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

The draft is inconsistent in its capitalization of "forward error correction":
"forward error correction" and "Forward error correction" 50 instances
"Forward Error Correction" 61 instances

The expansion of FEC in the list of abbreviations is "forward error correction" and in general IEEE does not capitalize the expansion of abbreviations unless the term is a proper noun.
The majority of instances of the "Forward Error Correction" version are followed by "(FEC)" or "(RS-FEC)" as an expansion of an abbreviation not in accordance with IEEE practice.

SuggestedRemedy

Change all instances of "Forward Error Correction" to "forward error correction" or "Forward error correction" as appropriate

Response *Response Status* **C**

ACCEPT.

Cl **83C** *SC* **83C** *P* **6442** *L* **19** # 14

Anslow, Pete IEEE

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

According to the IEEE SA Standards Style Manual, figures should be cited in the text.
This is not the case for the figures in Annex 83C.
Note: there is a separate comment concerning Annex 120A and Annex 135A.

SuggestedRemedy

For each figure in Annex 83C, add a sentence that cites the figure.
For Figure 83C-1 add:
Figure 83C-1 depicts an example of FEC implemented with the PCS sublayer.
For Figure 83C-2 add:
Figure 83C-2 depicts an example of FEC implemented with the PMD sublayer.
For Figure 83C-3 add:
Figure 83C-3 depicts an example of a single PMA sublayer with RS-FEC.
For Figure 83C-4 add:
Figure 83C-4 depicts an example of a single CAUI-10 interface with RS-FEC.
For Figure 83C-5 add:
Figure 83C-5 depicts an example of a single PMA sublayer without FEC.
For Figure 83C-6 add:
Figure 83C-6 depicts an example of a single XLAUI/CAUI-4 interface without FEC.
For Figure 83C-7 add:
Figure 83C-7 depicts an example of a separate SERDES for an optical module interface.

Response *Response Status* **C**

ACCEPT.

Cl **120A** *SC* **120A** *P* **6610** *L* **13** # 15

Anslow, Pete IEEE

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

According to the IEEE SA Standards Style Manual, figures should be cited in the text. This is not the case for the figures in Annex 120A or Annex 135A.
Note: there is a separate comment concerning Annex 83C.

SuggestedRemedy

For each figure in Annex 120A and Annex 135A, add a sentence that cites the figure.
For Figure 120A-1 add:
Figure 120A-1 depicts an example of 400GBASE-SR16 PMA layering with a single 400GAUI-16 chip-to-module interface.
For Figure 120A-2 add:
Figure 120A-2 depicts an example of 200GBASE-DR4/FR4/LR4 or 400GBASE-FR8/LR8 PMA layering with a single 200GAUI-8 or 400GAUI-16 chip-to-module interface.
For Figure 120A-3 add:
Figure 120A-3 depicts an example of 200GBASE-DR4/FR4/LR4 or 400GBASE-FR8/LR8 PMA layering with a single 200GAUI-4 or 400GAUI-8 chip-to-module interface.
For Figure 120A-4 add:
Figure 120A-4 depicts an example of 200GBASE-DR4/FR4/LR4 or 400GBASE-FR8/LR8 PMA layering with 200GAUI-8 or 400GAUI-16 chip-to-chip and 200GAUI-4 or 400GAUI-8 chip-to-module interfaces.
For Figure 120A-5 add:
Figure 120A-5 depicts an example of 400GBASE-DR4 PMA layering with a single 400GAUI-16 chip-to-module interface.
For Figure 120A-6 add:
Figure 120A-6 depicts an example of 400GBASE-DR4 PMA layering with a single 400GAUI-8 chip-to-module interface.
For Figure 120A-7 add:
Figure 120A-7 depicts an example of 200GBASE-DR4/FR4/LR4 and 400GBASE-FR8/LR8 PMA layering with 200GXS, 400GXS, and two 200GAUI-4, 400GAUI-8 interfaces.
For Figure 135A-1 add:
Figure 135A-1 depicts an example of a FEC sublayer implemented with the PCS and PMD sublayers.
For Figure 135A-2 add:
Figure 135A-2 depicts an example of a FEC sublayer implemented with the PMD sublayer.
For Figure 135A-3 add:
Figure 135A-3 depicts an example of a single 50G with the FEC sublayer implemented with the PCS sublayer.
For Figure 135A-4 add:
Figure 135A-4 depicts an example of an intermediate PMA device for a module interface with the FEC sublayer implemented with the PCS sublayer.
For Figure 135A-5 add:
Figure 135A-5 depicts an example of an intermediate PMA device with a FEC sublayer for a module interface.
For Figure 135A-8 (should be Figure 135A-6 - see separate comment) add:
Figure 135A-6 depicts an example of a 100GBASE-P PHY with CAUI-n and 100GAUI-n interfaces.

Response *Response Status* **C**

ACCEPT.

Cl **135A** *SC* **135A.2** *P* **6724** *L* **37** # 16

Anslow, Pete IEEE

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

Figure 135A-8 should be Figure 135A-6

SuggestedRemedy

Remove the override from the autonumber format for Figure 135A-8 so that it re-numbers as Figure 135A-6.

Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **0** *P* *L* # 17

Anslow, Pete IEEE

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

The IEEE SA Standards Board Operations Manual 6.4.7 contains requirements reflected in Maintenance request 1361, which adds a new Subclause 1.1.6 "Word usage" to the 802.3 revision draft that includes two footnotes:
1) The use of the word must is deprecated and cannot be used when stating mandatory requirements; must is used only to describe unavoidable situations.
2) The use of will is deprecated and cannot be used when stating mandatory requirements; will is only used in statements of fact.
However, IEEE P802.3 (IEEE 802.3dc) Draft 1.0 contains 614 instances of the word "must" that need to be replaced.

SuggestedRemedy

Make the changes proposed on pages 3 to 43 of:
https://www.ieee802.org/3/maint/public/anslow_1_0821.pdf

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Apply the changes in the suggested remedy with the following exception:

On page 4 of https://www.ieee802.org/3/dc/comments/anslow_1_0821.pdf change "implementers conform to" to "implementations conform to" (4 instances)

Cl **00** *SC* **0** *P* *L* # 18

Anslow, Pete IEEE

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

The IEEE SA Standards Board Operations Manual 6.4.7 contains requirements reflected in Maintenance request 1361, which adds a new Subclause 1.1.6 "Word usage" to the 802.3 revision draft that includes two footnotes:
1) The use of the word must is deprecated and cannot be used when stating mandatory requirements; must is used only to describe unavoidable situations.
2) The use of will is deprecated and cannot be used when stating mandatory requirements; will is only used in statements of fact.
However, when IEEE Std 802.3ct-2021 and IEEE Std 802.3cp-2021 are added to the draft, they contain 17 instances of the word "must" that need to be replaced.

SuggestedRemedy

When IEEE Std 802.3ct-2021 and IEEE Std 802.3cp-2021 are added to the draft, make the changes proposed on pages 45 and 46 of:
https://www.ieee802.org/3/maint/public/anslow_1_0821.pdf

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Apply the changes in the suggested remedy with the following exception:

On page 45 of https://www.ieee802.org/3/dc/comments/anslow_1_0821.pdf change "implementers conform to" to "implementations conform to" (1 instance)

Cl **7** *SC* **7.2.4.6** *P* **310** *L* **26** # 19

Anslow, Pete IEEE

Comment Type **E** *Comment Status* **A** *notes, bucket*

Subclause 6.4 of the IEEE SA Standards Board Operations Manual:
https://standards.ieee.org/about/policies/opman/sect6.html#6.4
defines notes in text as informative.
Also, the IEEE SA Standards Style Manual states that notes "shall not include mandatory requirements".
1.1.6 in the draft (and 6.4.7 of the IEEE SA Standards Board Operations Manual) contain:
"The word shall indicates mandatory requirements ..."
Consequently, it is not appropriate that 7.2.4.6, NOTE 2 contains "shall be aborted".

SuggestedRemedy

In 7.2.4.6, NOTE 2 change "as described in 7.2.4.3 above shall be aborted as shown in Figure 7-8." to: "as described in 7.2.4.3 above is aborted as shown in Figure 7-8."

Response *Response Status* **C**

ACCEPT.

Cl **8** *SC* **8.4.1.1** *P* **343** *L* **38** # 20

Anslow, Pete IEEE

Comment Type **E** *Comment Status* **A** *notes, bucket*

Subclause 6.4 of the IEEE SA Standards Board Operations Manual:
https://standards.ieee.org/about/policies/opman/sect6.html#6.4
defines notes in text as informative.
Also, the IEEE SA Standards Style Manual states that notes "shall not include mandatory requirements".
1.1.6 in the draft (and 6.4.7 of the IEEE SA Standards Board Operations Manual) contain:
"The word shall indicates mandatory requirements ..."
Consequently, it is not appropriate that the NOTE in 8.4.1.1 contains "shall be considered met", even though Clause 8 is not recommended for new installations.

SuggestedRemedy

In the NOTE in 8.4.1.1, change "then it is expected that the characteristic impedance periodicity requirement shall be considered met." to: "then it is expected that the characteristic impedance periodicity requirement is considered to be met."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

In the NOTE in 8.4.1.1, change:
"then it is expected that the characteristic impedance periodicity requirement shall be considered met."
to:
"then it is expected that the characteristic impedance periodicity requirement is met."

Cl **8** *SC* **8.5.3.1** *P* **347** *L* **53** # 21

Anslow, Pete IEEE

Comment Type **E** *Comment Status* **A** *notes, bucket*

Subclause 6.4 of the IEEE SA Standards Board Operations Manual:
https://standards.ieee.org/about/policies/opman/sect6.html#6.4
defines notes in text as informative.
Also, the IEEE SA Standards Style Manual states that notes "shall not include mandatory requirements".
1.1.6 in the draft (and 6.4.7 of the IEEE SA Standards Board Operations Manual) contain:
"The word shall indicates mandatory requirements ..."
Consequently, it is not appropriate that the NOTE in 8.5.3.1 contains "shall be no greater than 4 pF.", even though Clause 8 is not recommended for new installations.

SuggestedRemedy

In the NOTE in 8.5.3.1, change "Total capacitance of tap and active circuitry connected directly shall be no greater than 4 pF." to: "Total capacitance of tap and active circuitry connected directly is required to be no greater than 4 pF."

Response *Response Status* **C**

ACCEPT.

Cl **8** *SC* **8.6.2.1** *P* **350** *L* **29** # 22

Anslow, Pete IEEE

Comment Type **E** *Comment Status* **A** *notes, bucket*

Subclause 6.4 of the IEEE SA Standards Board Operations Manual:
https://standards.ieee.org/about/policies/opman/sect6.html#6.4
defines notes in text as informative.
Also, the IEEE SA Standards Style Manual states that notes "shall not include mandatory requirements".
1.1.6 in the draft (and 6.4.7 of the IEEE SA Standards Board Operations Manual) contain:
"The word shall indicates mandatory requirements ..."
Consequently, it is not appropriate that the NOTE in 8.6.2.1 contains "then care shall be taken", even though Clause 8 is not recommended for new installations.

SuggestedRemedy

In the NOTE in 8.6.2.1, change "then care shall be taken" to: "then care should be taken"

Response *Response Status* **C**

ACCEPT.

Cl **11** *SC* **11.3.2.1** *P* **435** *L* **47** # 23

Anslow, Pete IEEE

Comment Type **E** *Comment Status* **A** *notes, bucket*

Subclause 6.4 of the IEEE SA Standards Board Operations Manual:
https://standards.ieee.org/about/policies/opman/sect6.html#6.4
defines table notes as informative.
Also, the IEEE SA Standards Style Manual states that table notes "shall not include mandatory requirements".
1.1.6 in the draft (and 6.4.7 of the IEEE SA Standards Board Operations Manual) contain:
"The word shall indicates mandatory requirements ..."
Consequently, it is not appropriate that NOTE 2 in Table 11-1 contains "shall each be", even though Clause 11 is not recommended for new installations.

SuggestedRemedy

In NOTE 2 in Table 11-1, change "Frequency tolerance of the data carrier and headend local oscillator shall each be ± 25 kHz." to: "Frequency tolerance of the data carrier and headend local oscillator are ± 25 kHz each."

Response *Response Status* **C**

ACCEPT.

Cl **11** *SC* **11.3.2.2** *P* **436** *L* **26** # 24

Anslow, Pete IEEE

Comment Type **E** *Comment Status* **A** *notes, bucket*

Subclause 6.4 of the IEEE SA Standards Board Operations Manual:
https://standards.ieee.org/about/policies/opman/sect6.html#6.4
defines table notes as informative.
Also, the IEEE SA Standards Style Manual states that table notes "shall not include mandatory requirements".
1.1.6 in the draft (and 6.4.7 of the IEEE SA Standards Board Operations Manual) contain:
"The word shall indicates mandatory requirements ..."
Consequently, it is not appropriate that NOTE 2 in Table 11-2 contains "of the data carrier shall be", even though Clause 11 is not recommended for new installations.

SuggestedRemedy

In NOTE 2 in Table 11-2, change "Frequency tolerance of the data carrier shall be ± 25 kHz." to: "Frequency tolerance of the data carrier is ± 25 kHz."

Response *Response Status* **C**

ACCEPT.

Cl **50** *SC* **50.3.2** *P* **2305** *L* **45** # 25

Anslow, Pete IEEE

Comment Type **E** *Comment Status* **A** *notes, bucket*

Subclause 6.4 of the IEEE SA Standards Board Operations Manual:
https://standards.ieee.org/about/policies/opman/sect6.html#6.4
defines notes in text as informative.
Also, the IEEE SA Standards Style Manual states that notes "shall not include mandatory requirements".
1.1.6 in the draft (and 6.4.7 of the IEEE SA Standards Board Operations Manual) contain:
"The word shall indicates mandatory requirements ..."
Consequently, it is not appropriate that the NOTE in 50.3.2 contains "the latter shall take precedence."

SuggestedRemedy

In the NOTE in 50.3.2, change "the latter shall take precedence." to: "the latter takes precedence."

Response *Response Status* **C**

ACCEPT.

Cl **50** *SC* **50.3.2.3** *P* **2308** *L* **8** # 26

Anslow, Pete IEEE

Comment Type **E** *Comment Status* **A** *notes, bucket*

Subclause 6.4 of the IEEE SA Standards Board Operations Manual:
https://standards.ieee.org/about/policies/opman/sect6.html#6.4
defines notes in text as informative.
Also, the IEEE SA Standards Style Manual states that notes "shall not include mandatory requirements".
1.1.6 in the draft (and 6.4.7 of the IEEE SA Standards Board Operations Manual) contain:
"The word shall indicates mandatory requirements ..."
Consequently, it is not appropriate that the NOTE in 50.3.2.3 contains "shall take precedence in case of any discrepancy."

SuggestedRemedy

In the NOTE in 50.3.2.3, change "shall take precedence in case of any discrepancy." to:
"takes precedence in case of any discrepancy."

Response *Response Status* **C**

ACCEPT.

Cl **50** *SC* **50.3.2.3** *P* **2308** *L* **33** # 27

Anslow, Pete IEEE

Comment Type **E** *Comment Status* **A** *notes, bucket*

Subclause 6.4 of the IEEE SA Standards Board Operations Manual:
https://standards.ieee.org/about/policies/opman/sect6.html#6.4
defines table notes as informative.
Also, the IEEE SA Standards Style Manual states that table notes "shall not include mandatory requirements".
1.1.6 in the draft (and 6.4.7 of the IEEE SA Standards Board Operations Manual) contain:
"The word shall indicates mandatory requirements ..."
Consequently, it is not appropriate that NOTE 1 in Table 50-3 contains "shall take precedence in case of any discrepancy."

SuggestedRemedy

In NOTE 1 in Table 50-3, change "shall take precedence in case of any discrepancy." to:
"takes precedence in case of any discrepancy."

Response *Response Status* **C**

ACCEPT.

Cl **51** *SC* **51.5** *P* **2340** *L* **10** # 28

Anslow, Pete IEEE

Comment Type **E** *Comment Status* **A** *notes, bucket*

Subclause 6.4 of the IEEE SA Standards Board Operations Manual:
https://standards.ieee.org/about/policies/opman/sect6.html#6.4
defines notes in text as informative.
Also, the IEEE SA Standards Style Manual states that notes "shall not include mandatory requirements".
1.1.6 in the draft (and 6.4.7 of the IEEE SA Standards Board Operations Manual) contain:
"The word shall indicates mandatory requirements ..."
Consequently, it is not appropriate that the NOTE in 51.5 contains "parameters shall conform to"

SuggestedRemedy

In the NOTE in 51.5, change "All LVDS AC and DC parameters shall conform to the" to:
"All LVDS AC and DC parameters are required to conform to the"

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.5.1.1.16** *P* **1097** *L* **40** # 29

Marris, Arthur Cadence Design Systems

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

"enumerations" should be "enumeration" in three places also the final paragraph could be simplified

SuggestedRemedy

Change to "where operation in the no-FEC mode maps to the enumeration "disabled", operation in the BASE-R FEC mode maps to the enumeration "BASE-R enabled", and operation in the RS-FEC mode maps to the enumeration "RS-FEC enabled""

Change final paragraph to:
"If a Clause 45 MDIO Interface is present, then this attribute maps to the appropriate FEC control register based upon the PHY type and the FEC operating mode (see 45.2.10.3, 45.2.1.106 and 45.2.1.114).;"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

[Editor's note: Page number was changed to 1097.]

Change to "where operation in the no-FEC mode maps to the enumeration "disabled", operation in the BASE-R FEC mode maps to the enumeration "BASE-R enabled", and operation in the RS-FEC mode maps to the enumeration "RS-FEC enabled""

The change proposed to the final paragraph has lost the information on which bit it is in the given registers.

Cl **45** *SC* **45.2.1.155** *P* **1864** *L* **10** # 30

Marris, Arthur — Cadence Design Systems

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

It should be 14 rather than 41 in the first cell of the table

SuggestedRemedy

Change to "1.1320.15:14"

Response *Response Status* **C**

ACCEPT.

Cl **143** *SC* **143.2.1** *P* **5514** *L* **32** # 31

Kramer, Glen — Broadcom

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

In the sentence "The concept of a logical link is further defined in 144.3.4", the cross-reference points to a wrong sub-clause. The subclause 144.3.4 just describes different LLID types. The concept of logical links is explained in subclause 144.1.1.2 "Concept of logical links"

SuggestedRemedy

Replace cross-reference 144.3.4 with 144.1.1.2.

Response *Response Status* **C**

ACCEPT.

Cl **FM** *SC* **FM** *P* **1** *L* **22** # 32

Grow, Robert — RMG Consulting

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

There are two additional approved and published amendments that should be included in the revision.

SuggestedRemedy

Change "and IEEE Std 802.3cv-2021" to "IEEE Std 802.3cv-2021, IEEE Std 802.3ct-2021, and IEEE Std 802.3cp"-2021".

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

The suggested remedy is addressed in the set of changes proposed in the response to comment #110.

Cl **1** *SC* **1.2.5** *P* **167** *L* **50** # 33

Grow, Robert — RMG Consulting

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

The RAC finds the level of Style Manual rules for decimal numbers at odds with no style guidance for binary and hexadecimal numbers. 1.2.5 does have conventions for hexadecimal numbers, but they should be enhanced.

SuggestedRemedy

add the first sentnece to the second paragraph of 1.2.5 plus the following paragraphs:

. . . Hexadecimal values may also be indicated in text as hexadecimal or hex.

Hexadecimal numbers and values use upper case for hexadecimal digits A through F.

Speparators may be used to improve readability of numbers-typically after every two or four hex digits counting from right to left. When hexadecimal is used for a fixed length value, protocol field, etc, where the value is not a multiple of 4 bits, the leftmost hexadecimal digit is truncated to fit the value's length (e.g., an 11 bit value of 0x25F is 010 0101 1111 in binary).

Spaces are used as separators unless a different separator is defined to indicate specific information about the value. For example, hyphens separating the octets of a MAC address indicate the Hexadecimal Representation defined in IEEE Std 802. This standard uses Hexadecimal Representation for MAC addresses.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace the contents of 1.2.5 with the following:

"Numerical values designated by the 0x prefix indicate a hexadecimal interpretation of the corresponding number. For example: 0x0F represents an 8-bit hexadecimal value of the decimal number 15 and 0x00000000 represents a 32-bit hexadecimal value of the decimal number 0.

Numerical values designated with a 16 subscript indicate a hexadecimal interpretation of the corresponding number. For example: 0F_{16} represents an 8-bit hexadecimal value of the decimal number 15.

Hexadecimal values may also be indicated in text as hexadecimal or hex.

Hexadecimal numbers and values use upper case for hexadecimal digits A through F.

Separators may be used to improve readability of numbers-typically after every two or four hex digits counting from right to left. When hexadecimal is used for a fixed length value, protocol field, etc., where the value is not a multiple of 4 bits, the leftmost hexadecimal digit is truncated to fit the value's length (e.g., an 11 bit value of 0x25F is 010 0101 1111 in binary)."

[Note that x_{y} is shorthand for "x" with subscript "y".]

Cl **45** *SC* **45.2.1.158** *P* **1866** *L* **28** # 34

Grow, Robert RMG Consulting

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

The RAC finds the detailed level of Style Manual conventions for decimal numbers at odds with having no style guidance for other number bases. Recommended changes for the Style Manual have been sent by the RAC Chair to IEEE SA editorial staff (attached)for consideration in the next version of the Style Manual. IEEE Std 802.3 should be consistent on the case used for hexadecimal digits A through F (upper case). Problems with YANG doing string compares of hex values (e.g., on MAC addresses) reinforces the need for hex digit consistency.

SuggestedRemedy

Replace lower case hexadecimal digits a through f with upper case A through F. (A list of other locations is provided in an attached file. Please note the volume of change in Annexes, e.g., Annex 119.)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace lower case hexadecimal digits a through f with upper case A through F. Use:
<https://www.ieee802.org/3/dc/comments/grow_1_0821.xls>
as guidance with editorial license.

Cl **103** *SC* **103.3.5.1** *P* **4334** *L* **41** # 35

Grow, Robert RMG Consulting

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

We should be consistent in use of separators for hexadecimal readability. Use of spaces would be consistent with decimal numbers, and has been recommended to IEEE editorial for inclusion in the next revision of the IEEE Standards Style Manual. Other separators should be reserved to indicate something else. For example hyphens indicate MAC address hexidecimal representation per IEEE Std 802.

SuggestedRemedy

Replace "-" with space " " unless a MAC address. Some locations also have changes requested for case of hexadecimal digits and Clause 142 locations also have a another change related to a comment on a unique hexidecimal notation convention ror that clause. (Attached file includes: Page, Sub-Clause and Line listing. Some locations)

Response *Response Status* **U**

REJECT.

The response to comment #33 did not include enforcement of the use of a specific separator.

There is no consensus in the comment resolution group to make this change.

Cl **119A** *SC* **119A** *P* **6609** *L* **38** # 36

Grow, Robert RMG Consulting

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

Last line of table appears to have bold text.

SuggestedRemedy

Check FrameaMaker source and remove bold if it is there.

Response *Response Status* **C**

REJECT.

The text introducing these tables includes: "In these tables, italicized characters are alignment markers and bold characters are padding for the alignment markers.", so the bold characters are intentional.

Cl **142** *SC* **142.1.1.1** *P* **5470** *L* **32** # 37

Grow, Robert RMG Consulting

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

This paragrah does not apply to the complete standard.

SuggestedRemedy

Replace "standard" with "clause".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change the first sentence of 142.1.1.1 to:
"The body of this clause includes state diagrams and the associated definitions of variables, constants, and functions."

Cl **142** *SC* **142.1.1.2** *P* **5470** *L* **42** # 38

Grow, Robert RMG Consulting

Comment Type **ER** *Comment Status* **R** *hex*

This convention unique for Clause 142 is not justified by the six uses.

SuggestedRemedy

Delete the second subbullet. If hyphenation comments are accepted, then the entirety of 142.1.1.2 can be deleted. Expand the six occurances on p. 5476, l. 32; Pl 5490, l. 12 and 23; p. 5493, l. 14; p. 5499, l. 8; and p. 5502, l. 49.

Response *Response Status* **U**

REJECT.

The convention is local to Clause 142 and aids in the understanding of structure of large hexadecimal values. There was no consensus in the comment resolution group to make the proposed change.

Cl **FM** *SC* **FM** *P* **25** *L* **11** # 39

Grow, Robert RMG Consulting

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

Does not Maxim also deserve "Grateful acknowledgement"? Would IEEE legal prevent us from updating the statement, e.g., because of copyright release correspondance text?

SuggestedRemedy

Replace with "Grateful acknowledgment is made for portions of this standard reprinted with permission from Maxim Integrated Products, Inc., DS18B20 "Programmable Resolution 1-Wire Digital Thermometer" Data Sheet, Rev. 042208, © 2008."

Response *Response Status* **C**

ACCEPT.

Cl **1** *SC* **1.4** *P* *L* # 40

Grow, Robert RMG Consulting

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

The draft does not sort definitions per https://www.ieee802.org/3/WG_tools/editorial/requirements/words.html#sort.

SuggestedRemedy

Consider if 802.3 sort order is still valid and comprehensive, if not we need new rules for sort order.

Response *Response Status* **C**

REJECT.

The definitions are sorted per <https://www.ieee802.org/3/WG_tools/editorial/requirements/words.html#sort>. No alternative sort order is suggested.

No change to the draft.

Cl **113** *SC* **113.7.3.1** *P* **4634** *L* **35** # 41

Grow, Robert RMG Consulting

Comment Type **TR** *Comment Status* **A** *equations, bucket*

Maintenance 1334 does not seem to be correctly implemented in the draft (e.g., "PSANEXT,f.", circle R and circle C and other odd characters)

SuggestedRemedy

Fix fonts or entry errors of equation symbols. Remove "." after dB

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Resolve with comment #103.

Cl **113** *SC* **113.7.4.3.9** *P* **4639** *L* **10** # 42

Grow, Robert RMG Consulting

Comment Type **TR** *Comment Status* **A** *equations, bucket*

Maintenance 1335 does not seem to be correctly implemented in the draft (e.g., "PSANEXT,f.", circle R and circle C and other odd characters)

SuggestedRemedy

Fix fonts or entry errors of equation symbols. Remove "." after dB

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Resolve with comment #103.

Cl **142** *SC* **142.3.5.1** *P* **5499** *L* **8** # 43

Grow, Robert RMG Consulting

Comment Type **ER** *Comment Status* **R** *hex*

Maintenance 1366 -- As noted on my comment to p. 5470, l. 42, the unique hexadecimal convention for repeating sequences should not be used. Similarly, my comment to p. 4334, l. 41 would replace hyphen separators with space separators.

SuggestedRemedy

Expand the hexadecimal string and replace hyphens with spaces per comments cited in this comment.

Response *Response Status* **U**

REJECT.

See the response to comments #35 and #38.

Cl **113** *SC* **113.12.6** *P* **4653** *L* **16** # 44

Ran, Adee Cisco

Comment Type **E** *Comment Status* **A** *alternate, bucket*

"Alternate way to enable the test modes"

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In this sentence it should be replaced by "equivalent".

SuggestedRemedy

Change "Alternate" to "Equivalent".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The text in the referenced subclause 113.5.2 is "PHYs without a MDIO shall provide a means to enable these modes for conformance testing."

Change "Alternate way to enable the test modes" to "Provide a means to enable the test modes".

Add *MDIO as an item in 113.12.2 and change PME6 to status ="!MDIO:M", support="Y[ ] / N/A [ ]", empty comment.

Cl **118** *SC* **118.5.7** *P* **4810** *L* **5** # 45

Ran, Adee Cisco

Comment Type **E** *Comment Status* **A** *alternate, bucket*

"Alternate access to XS Management objects is provided"

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In this sentence it should be replaced by "equivalent" as in the referenced subclause 119.3.

SuggestedRemedy

Change "Alternate" to "Equivalent".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The text in the referenced subclause 119.3 is "If an MDIO Interface is provided (see Clause 45), they are accessed via that interface. If not, it is recommended that an equivalent access is provided." Hence this option is conditional on MDIO.

In 118.5.7 item M1, change "Alternate" to "Equivalent" and status to !MD:O. Add N/A [ ] to the Support column.

Cl **119** *SC* **119.7.4.8** *P* **4849** *L* **15** # 46

Ran, Adee Cisco

Comment Type **E** *Comment Status* **A** *alternate, bucket*

"Alternate access to PCS Management objects is provided"

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In this sentence it should be replaced by "equivalent" as in the referenced subclause 119.3.

SuggestedRemedy

Change "Alternate" to "Equivalent".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The text in the referenced subclause 119.3 is "If an MDIO Interface is provided (see Clause 45), they are accessed via that interface. If not, it is recommended that an equivalent access is provided." Hence this option is conditional on MDIO.

In 119.7.4.8 item M1, change "Alternate" to "Equivalent" and status to !MD:O. Add N/A [ ] to the Support column.

Cl **126** *SC* **126.12.5** *P* **5105** *L* **48** # 47

Ran, Adee Cisco

Comment Type **E** *Comment Status* **A** *alternate, bucket*

"Alternate way to enable the test modes"

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In this sentence it should be replaced by "equivalent".

SuggestedRemedy

Change "Alternate" to "Equivalent".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The text in the referenced subclause 126.5.2 is "PHYs without a MDIO shall provide a means to enable these modes for conformance testing."

Change "Alternate way to enable the test modes" to "Provide a means to enable the test modes".

Add *MDIO as an item in 126.12.2 and change PME6 to status ="!MDIO:M", support="Y[ ] / N/A [ ]", empty comment.

Cl **129** *SC* **129.7.6** *P* **5178** *L* **43** # 48

Ran, Adee Cisco

Comment Type **E** *Comment Status* **A** *alternate, bucket*

"Alternate access to PCS Management objects is provided"

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In this sentence it should be replaced by "equivalent" as in the referenced subclause 49.2.14.

SuggestedRemedy

Change "Alternate" to "Equivalent".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

[Editor's Note: Clause changed from 126 to 129 and subclause changed from 126.12.5 to 129.7.6]

The text in the referenced subclause 49.2.14 is "If [MDIO interface is] not [provided], it is recommended that an equivalent access be provided". Hence this option is conditional on MDIO.

In 129.7.6 change "Alternate" to "Equivalent" and status to !MD:O. Add N/A [ ] to the support column.

In 129.7.3 change Item "MD" to "*MD".

Cl **133** *SC* **133.5.4.7** *P* **5224** *L* **18** # 49

Ran, Adee Cisco

Comment Type **E** *Comment Status* **A** *alternate, bucket*

"Alternate access to PCS Management objects is provided"

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In this sentence it should be replaced by "equivalent" as in the referenced subclause 82.3.

SuggestedRemedy

Change "Alternate" to "Equivalent".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The text in the referenced subclause 82.3 is "If [MDIO interface is] not [provided], it is recommended that an equivalent access be provided". Hence this option is conditional on MDIO.

Change "Alternate" to "Equivalent" and status to !MD:O. Add N/A [ ] to the support column.

Cl **48** *SC* **48.1.5** *P* **2220** *L* **41** # 50

Ran, Adee Cisco

Comment Type **E** *Comment Status* **R** *alternate, bucket*

"10GBASE-X PCS and PMA functions embodied in the XGXS described in Clause 47 may be used to attach to alternate 10 Gb/s PHYs such as 10GBASE-R or 10GBASE-W."

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In this sentence it can be replaced by "other".

SuggestedRemedy

Change "alternate" to "other".

Response *Response Status* **C**

REJECT.

According to The IEEE Editorial Style Manual for Authors, "Alternate" can be used to describe a substitute. The text is therefore correct.

Cl **10** *SC* **10.3.1.4** *P* **406** *L* **29** # 51

Ran, Adee Cisco

Comment Type **E** *Comment Status* **R** *alternate, bucket*

"Alternately, a MAU may reset these functions automatically after a period of 0.5 s ± 50%."

Alternately means "With two things continually following and succeeded by each other; one after the other". In this sentence it should be replaced by "alternatively".

SuggestedRemedy

Change "Alternately" to "Alternatively".

Response *Response Status* **C**

REJECT.

According to The IEEE Editorial Style Manual for Authors, "Alternate" can be used to describe a substitute. The text is therefore correct.

Cl **27** *SC* **27.3.2.1.2** *P* **899** *L* **9** # 52

Ran, Adee Cisco

Comment Type **E** *Comment Status* **R** *alternate, bucket*

"Alternately, one or more ports has detected a carrier that is not valid."

Alternately means "With two things continually following and succeeded by each other; one after the other". In this sentence it should be replaced by "alternatively".

SuggestedRemedy

Change "Alternately" to "Alternatively".

Response *Response Status* **C**

REJECT.

According to The IEEE Editorial Style Manual for Authors, "Alternate" can be used to describe a substitute. The text is therefore correct.

Cl **58A** *SC* **58A** *P* **6296** *L* **4** # 53

Ran, Adee Cisco

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

"Alternately, the test set may recognize the frame boundaries in the incoming data stream"

Alternately means "With two things continually following and succeeded by each other; one after the other". In this sentence it should be replaced by "alternatively".

SuggestedRemedy

Change "Alternately" to "Alternatively".

Response *Response Status* **C**

REJECT.

According to The IEEE Editorial Style Manual for Authors, "Alternate" can be used to describe a substitute. The text is therefore correct.

Cl **104** *SC* **104.5** *P* **4368** *L* **37** # 54

Ran, Adee Cisco

Comment Type **E** *Comment Status* **R** *alternate, bucket*

"A device that is capable of becoming a PD may have the ability to draw power from an alternate power source. A PD requiring power from the PI may simultaneously draw power from an alternate power source."

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In these sentences it should be replaced by "different".

SuggestedRemedy

Change "an alternate" to "a different" in both sentences.

Response *Response Status* **C**

REJECT.

According to The IEEE Editorial Style Manual for Authors, "Alternate" can be used to describe a substitute. The text is therefore correct.

Cl **145** *SC* **145.3** *P* **5694** *L* **44** # 55

Ran, Adee Cisco

Comment Type **E** *Comment Status* **R** *alternate, bucket*

"A device that is capable of becoming a PD may have the ability to draw power from an alternate power source. A PD requiring power from the PI may simultaneously draw power from an alternate power source."

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In these sentences it should be replaced by "different".

SuggestedRemedy

Change "an alternate" to "a different" in both sentences.

Response *Response Status* **C**

REJECT.

According to The IEEE Editorial Style Manual for Authors, "Alternate" can be used to describe a substitute. The text is therefore correct.

Cl **33** *SC* **33.3** *P* **1335** *L* **50** # 56

Ran, Adee Cisco

Comment Type **E** *Comment Status* **R** *alternate, bucket*

"A device that is capable of becoming a powered device may or may not have the ability to draw power from an alternate power source."

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In this sentence it should be replaced by "different".

SuggestedRemedy

Change "an alternate" to "a different".

Response *Response Status* **C**

REJECT.

According to The IEEE Editorial Style Manual for Authors, "Alternate" can be used to describe a substitute. The text is therefore correct.

Cl **1** *SC* **1.4.155** *P* **189** *L* **32** # 57

Ran, Adee Cisco

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

The definition of 50/10G-EPON should include a clause cross-reference like other definitions.

Also applies to related definitions: 1.4.121, 1.4.155, 1.4.156, 1.4.157, 1.4.167, 1.4.408.

SuggestedRemedy

Add "See IEEE Std 802.3, Clause 142" to these definitions.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

1.4.121, 1.4.155, 1.4.156, 1.4.157, 1.4.167, and 1.4.408 all refer to EPON architectures and not specifically to the RS, PCS, and/or PMA sublayer. Clause 56 appears to be the more appropriate reference. Add the parenthetical "(See IEEE Std 802.3, Clause 56.)" at the end of each definition.

Cl **1** *SC* **1.4.45** *P* **182** *L* **20** # 58

Ran, Adee Cisco

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

The definition of 10/10G-EPON should include a clause cross-reference like other definitions.

Also applies to related definitions 1.4.47, 1.4.81.

SuggestedRemedy

Add "See IEEE Std 802.3, Clause 76" to these definitions.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

1.4.45, 1.4,47, and 1.4.81 refer to EPON architectures and not specifically to the RS, PCS, and/or PMA sublayer. Clause 56 appears to be the more appropriate reference. Add the parenthetical "(See IEEE Std 802.3, Clause 56.)" at the end of these three definitions.

Cl **D** *SC* **D.4.1.1** *P* **6124** *L* **44** # 59

Ran, Adee Cisco

Comment Type **E** *Comment Status* **A** *alternate, bucket*

"The use of an alternate fiber type with a particular implementation may have the following consequences. <...> and a numerical aperture (NA) that are smaller or larger than that of the alternate fiber size. <...> the potential effects of the use of alternate fiber sizes"

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In these sentences it should be replaced by "different".

SuggestedRemedy

Change "(an) alternate" to "(a) different" in all 3 sentences.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The heading of the parent subclause D.4.1 is "Alternative fiber types". For consistency, the text should match the title.

Change "alternate" to "alternative" in "The use of an alternate fiber type", "smaller or larger than that of the alternate fiber size", and "the potential effects of the use of alternate fiber sizes".

Cl **61A** *SC* **61A.2** *P* **6297** *L* **44** # 60

Ran, Adee Cisco

Comment Type **E** *Comment Status* **R** *alternate, bucket*

"An alternate example procedure"

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In this sentence it should be replaced by "alternative".

SuggestedRemedy

Change "alternate" to "alternative".

Response *Response Status* **C**

REJECT.

According to The IEEE Editorial Style Manual for Authors, "Alternate" can be used to describe a substitute. The text is therefore correct.

Cl **113A** *SC* **113A.2** *P* **6596** *L* **22** # 61

Ran, Adee Cisco

Comment Type **E** *Comment Status* **R** *alternate, bucket*

"see Annex 40B for the description of an alternate clamp"

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In this sentence it should be replaced by "alternative".

SuggestedRemedy

Change "alternate" to "alternative".

Response *Response Status* **C**

REJECT.

According to The IEEE Editorial Style Manual for Authors, "Alternate" can be used to describe a substitute. The text is therefore correct.

Cl **7** *SC* **7.3.2** *P* **315** *L* **7** # 62

Ran, Adee Cisco

Comment Type **E** *Comment Status* **R** *alternate, bucket*

"It is not precluded that specific DTE and MAU designs be manually switched or set to alternate rates"

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In this sentence it should be replaced by "different".

SuggestedRemedy

Change "alternate" to "different".

Response *Response Status* **C**

REJECT.

According to The IEEE Editorial Style Manual for Authors, "Alternate" can be used to describe a substitute. The text is therefore correct.

Cl **36** *SC* **36.2.5.1.3** *P* **1451** *L* **11** # 63

Ran, Adee Cisco

Comment Type **E** *Comment Status* **R** *alternate, bucket*

"that uses an alternate form to support the EEE capability"

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In this sentence it should be replaced by "different".

SuggestedRemedy

Change "alternate" to "different".

Response *Response Status* **C**

REJECT.

According to The IEEE Editorial Style Manual for Authors, "Alternate" can be used to describe a substitute. The text is therefore correct.

Cl **28** *SC* **28.5.4.2** *P* **965** *L* **17** # 64

Ran, Adee Cisco

Comment Type **E** *Comment Status* **A** *alternate, bucket*

"MII based or alternate management"

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In this sentence it should be replaced by "equivalent".

SuggestedRemedy

Change "alternate" to "equivalent".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The text in the referenced subclause 28.2 for this item is "The Auto-Negotiation function shall provide an optional Management function that provides a control and status mechanism". This statement badly written, and it is unclear whether the management function is mandatory or optional. There is no mention of "MII" nor of "alternate" in the text, and it does not suggest a substitute of anything.

Since it appears as optional in the PICS and the management function is not defined, the "shall" seems to be out of place.

In 28.2, change "The Auto-Negotiation function shall provide an optional Management function that provides a control and status mechanism" to "The Auto-Negotiation function may include a management function that provides a control and status mechanism".

In 28.5.4.2 AN7, change "Feature" to "Management function", with empty value/comment.

Cl **49** *SC* **49.3.6** *P* **2291** *L* **19** # 65

Ran, Adee Cisco

Comment Type **E** *Comment Status* **A** *alternate, bucket*

"Alternate access to PCS Management objects is provided"

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In this sentence it should be replaced by "equivalent" as in the referred subclause 49.2.14.

SuggestedRemedy

Change "Alternate" to "Equivalent".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The text in the referenced subclause 49.2.14 is "If an MDIO Interface is provided (see Clause 45), they are accessed via that interface. If not, it is recommended that an equivalent access be provided.". Hence this option is conditional on MDIO.

In 49.3.6 item M1, change "Alternate" to "Equivalent" and status to !MD:O. Add N/A [ ] to the Support column.
In 49.3.3 change item "MD" to "*MD".

Cl **55** *SC* **55.12.6** *P* **2581** *L* **44** # 66

Ran, Adee Cisco

Comment Type **E** *Comment Status* **A** *alternate, bucket*

"Alternate way to enable the test modes"

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In this sentence it should be replaced by "equivalent".

SuggestedRemedy

Change "Alternate" to "Equivalent".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The text in the referenced subclause 55.5.2 is "PHYs without a MDIO shall provide a means to enable these modes for conformance testing."

MDIO is currently not a major capability in the PICS, so the status cannot be conditional on it.

Change "Alternate way to enable the test modes" to "Provide a means to enable the test modes".

Cl **74** *SC* **74.11.4** *P* **3134** *L* **6** # 67

Ran, Adee Cisco

Comment Type **E** *Comment Status* **A** *alternate, bucket*

"Alternate access to FEC Management objects is provided"

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In this sentence it should be replaced by "equivalent" as in the referenced subclauses 74.8.2 and 74.8.4.

SuggestedRemedy

Change "Alternate" to "Equivalent".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The text in the referenced subclause 74.8.2 is "An MDIO interface or an equivalent management interface shall be provided". This is a mandatory requirement to have either MDIO or another interface; therefore, it is mandatory to have another interface conditional on no MDIO.

The text in the second referenced subclause 74.8.4 is "If an MDIO interface is provided (see Clause 45), it is accessed via that interface. If not, it is recommended that an equivalent access be provided". This is a recommendation, not an option, and does not require a PICS item. !! alternatively, add a new PICS item !!

Change item M1: Feature="Equivalent management interface is provided", Subclause=74.8.2, Status="!MD:M", Support="Yes [ ] / N/A [ ]".

Cl **82** *SC* **82.7.4.7** *P* **3454** *L* **52** # 68

Ran, Adee Cisco

Comment Type **E** *Comment Status* **A** *alternate, bucket*

"Alternate access to PCS Management objects is provided"

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In this sentence it should be replaced by "equivalent" as in the referenced subclause 82.3.

SuggestedRemedy

Change "Alternate" to "Equivalent".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The text in the referenced subclause 82.3 is "If an MDIO Interface is provided (see Clause 45), they are accessed via that interface. If not, it is recommended that an equivalent access be provided." Hence this option is conditional on MDIO.

In 82.7.4.7 item M1, change "Alternate" to "Equivalent" and status to !MD:O. Add N/A [ ] to the Support column.
In 82.7.3 change item "MD" to "*MD".

Cl **79** *SC* **79.3.5.3** *P* **3338** *L* **50** # 69

Ran, Adee Cisco

Comment Type **E** *Comment Status* **R** *alternate, bucket*

"A receiving link partner may inform the transmitter of an alternate desired Tw_sys_tx"

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In this sentence it should be replaced by "different"

SuggestedRemedy

Change "an alternate" to "a different".

Response *Response Status* **C**

REJECT.

According to The IEEE Editorial Style Manual for Authors, "Alternate" can be used to describe a substitute. The text is therefore correct.

Cl **82** *SC* **82.2.9** *P* **3427** *L* **49** # 70

Ran, Adee Cisco

Comment Type **E** *Comment Status* **R** *alternate, bucket*

"For the optional EEE capability, an alternate method of alignment is used when operating in the deep sleep low power state"

Alternate means "every other" or "each following and succeeded by the other in a regular pattern". In this sentence it should be replaced by "different"

SuggestedRemedy

Change "an alternate" to "a different".

Response *Response Status* **C**

REJECT.

According to The IEEE Editorial Style Manual for Authors, "Alternate" can be used to describe a substitute. The text is therefore correct.

Cl **45** *SC* **45.2.7.6** *P* **2071** *L* **46** # 71

Ran, Adee Cisco

Comment Type **E** *Comment Status* **R** *alternate, bucket*

In "alternate common mode", "alternate" means "every other", and should be "alternative".

Also in "alternate abilities" in the next paragraph, L48.

Comment also applies to 45.2.7.22.

SuggestedRemedy

Change to "alternative common mode" and "alternative abilities" in both subclauses.

Response *Response Status* **C**

REJECT.

According to The IEEE Editorial Style Manual for Authors, "Alternate" can be used to describe a substitute. The text is therefore correct.

Cl **28** *SC* **28.2.4.1.3** *P* **941** *L* **35** # 72

Ran, Adee Cisco

Comment Type **E** *Comment Status* **R** *alternate, bucket*

In "alternate common mode", "alternate" means "every other". In this case the appropriate word is "alternative".

Also in "alternate abilities" in the next paragraph, L38.

SuggestedRemedy

Change to "alternative common mode" and "alternative abilities".

Response *Response Status* **C**

REJECT.

According to The IEEE Editorial Style Manual for Authors, "Alternate" can be used to describe a substitute. The text is therefore correct.

Cl **1** *SC* **1.3** *P* **169** *L* **51** # 73

Ran, Adee Cisco

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

URL https://www.jedec.org not formatted in blue+underline as other URLs

SuggestedRemedy

Apply the common URL format

Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.3.1.3.5** *P* **1577** *L* **51** # 74

Ran, Adee Cisco

Comment Type **E** *Comment Status* **R** *download, bucket*

URL http://standards.ieee.org/downloads/802.3 is a redirect. The data referred to in this subclause is not available separately but only downloadable as a part of https://standards.ieee.org/content/dam/ieee-standards/standards/web/download/802.3-2018_downloads.zip.

Also on P1628 L1 (40.6.1.2.3) and P1633 L1 (40.6.1.2.4)

SuggestedRemedy

Change "at http://standards.ieee.org/downloads/802.3" to "as part of https://standards.ieee.org/content/dam/ieee-standards/standards/web/download/802.3-2018_downloads.zip"

Or the URL for a new zip file to be created for the next revision.

Format as URL.

Response *Response Status* **C**

REJECT.

The method used by IEEE SA to provide downloads may change in the future, so this URL should not be changed and a reference to a specifc file or type of file should be avoided.

Cl **68** *SC* **68.6.6.2** *P* **2963** *L* **54** # 75

Ran, Adee Cisco

Comment Type **E** *Comment Status* **R** *download, bucket*

URL http://standards.ieee.org/downloads/802.3 is a redirect. The data referred to in this subclause is not available separately but only downloadable as a part of https://standards.ieee.org/content/dam/ieee-standards/standards/web/download/802.3-2018_downloads.zip.

SuggestedRemedy

Change "at http://standards.ieee.org/downloads/802.3" to "as part of https://standards.ieee.org/content/dam/ieee-standards/standards/web/download/802.3-2018_downloads.zip"

Or the URL for a new zip file to be created for the next revision.

Format as URL.

Response *Response Status* **C**

REJECT.

[Editor's note: Page changed from 2964 to 2963.]

The method used by IEEE SA to provide downloads may change in the future, so this URL should not be changed and a reference to a specifc file or type of file should be avoided.

Cl **120** *SC* **120.5.11.2.3** *P* **4869** *L* **30** # 76

Ran, Adee Cisco

Comment Type **E** *Comment Status* **R** *download, bucket*

URL http://standards.ieee.org/downloads/802.3 is a redirect. The data referred to in this subclause is not available separately but only downloadable as a part of https://standards.ieee.org/content/dam/ieee-standards/standards/web/download/802.3-2018_downloads.zip.

SuggestedRemedy

Change "at http://standards.ieee.org/downloads/802.3" to "as part of https://standards.ieee.org/content/dam/ieee-standards/standards/web/download/802.3-2018_downloads.zip"

Or the URL for a new zip file to be created for the next revision.

Format as URL.

Response *Response Status* **C**

REJECT.

The method used by IEEE SA to provide downloads may change in the future, so this URL should not be changed and a reference to a specifc file or type of file should be avoided.

Cl **A** *SC* **A** *P* **6097** *L* **53** # 77

Ran, Adee Cisco

Comment Type **E** *Comment Status* **A** *download, bucket*

URL http://standards.ieee.org/downloads/802.3 is a redirect. The document referred to in this annex is not available separately but only downloadable as a part of https://standards.ieee.org/content/dam/ieee-standards/standards/web/download/802.3-2018_downloads.zip.

SuggestedRemedy

Change "at http://standards.ieee.org/downloads/802.3" to "as part of https://standards.ieee.org/content/dam/ieee-standards/standards/web/download/802.3-2018_downloads.zip"

Or the URL for a new zip file to be created for the next revision.

Format as URL.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The method used by IEEE SA to provide downloads may change in the future, so this URL should not be changed and a reference to a specifc file or type of file should be avoided. However, footnote 14 could be re-worded to be more consistent with other footnotes with similar purpose.

Change footnote 14 to "This document is available at http://standards.ieee.org/downloads/802.3/."

Cl **142** *SC* **142.2.4.1** *P* **5482** *L* **18** # 78

Ran, Adee Cisco

Comment Type **E** *Comment Status* **A** *download, bucket*

URL http://standards.ieee.org/downloads/802.3 is a redirect. The data referred to in this subclause is currently in https://standards.ieee.org/content/dam/ieee-standards/standards/web/download/802.3ca-2020_downloads.zip.

Also in P5486 L54 (142.2.4.3) and P6789 L49 (142A.2).

SuggestedRemedy

Change "at http://standards.ieee.org/downloads/802.3" to "as part of https://standards.ieee.org/content/dam/ieee-standards/standards/web/download/802.3ca-2020_downloads.zip"

Or the URL for a new zip file to be created for the next revision.

Format as URL.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The method used by IEEE SA to provide downloads may change in the future, so this URL should not be changed and a reference to a specifc file or type of file should be avoided. However the colon after "at" could be removed to make the note consistent with other notes with a similar purpose.

Change "at:" to "at" in the notes in 142.2.4.1, 142.2.4.3, and Annex 142A.2.

Also change footnote 10 in Annex 76A to "The tables in the annex are available at http://standards.ieee.org/downloads/802.3/."

Cl **55A** *SC* **55A.2** *P* **6282** *L* **54** # 79

Ran, Adee Cisco

Comment Type **E** *Comment Status* **A** *download, bucket*

URL http://standards.ieee.org/downloads/802.3 is a redirect. The data referred to in this subclause is not available separately but only downloadable as a part of https://standards.ieee.org/content/dam/ieee-standards/standards/web/download/802.3-2018_downloads.zip, with a different name, "Clause 55 A matrices.zip"

SuggestedRemedy

Change "matrices.zip is available at http://standards.ieee.org/downloads/802.3" to: "Clause 55 A matrices.zip" file is available as part of https://standards.ieee.org/content/dam/ieee-standards/standards/web/download/802.3-2018_downloads.zip

Or the URL for a new zip file to be created for the next revision.

Format as URL.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The method used by IEEE SA to provide downloads may change in the future, so this URL should not be changed and a reference to a specifc file or type of file should be avoided.

Delete the last sentence of the first paragraph of 55A.2: "H.txt, col_swap.txt and row_swap.txt are informative and are also available online in the file matrices.zip."
Move footnote 27 to the previous sentence.
Change footnote 27 to "The files are available at http://standards.ieee.org/downloads/802.3/."

Cl **FM** *SC* **FM** *P* **2** *L* **52** # 80

Ran, Adee Cisco

Comment Type **E** *Comment Status* **R** *redirect, bucket*

URL http://www.ieee.org/web/aboutus/whatis/policies/p9-26.html is a redirect

SuggestedRemedy

Change to target URL: https://www.ieee.org/about/corporate/governance/p9-26.html

Response *Response Status* **C**

REJECT.

This URL is provided in the IEEE-SA frontmatter template. The direct URL could change over time and the redirect indicates that the validity of the URL in the frontmatter is being maintained.

Cl **1** *SC* **1.3** *P* **178** *L* **54** # 81

Ran, Adee Cisco

Comment Type **E** *Comment Status* **R** *redirect, bucket*

URL https://www.snia.org/sff/specifications is a redirect

SuggestedRemedy

Change to target URL: https://www.snia.org/technology-communities/sff/specifications

Response *Response Status* **C**

REJECT.

The link provided in the standard should be one that will be maintained over time. The redirect indicates that it is being maintained despite reorganization of the content at the target site. There is a risk the the new link will not be maintained in this way.

Cl **93A** *SC* **93A.2** *P* **6532** *L* **18** # 82

Ran, Adee Cisco

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

The figure is labeled 93A-1 but should be 93A-2 (another Figure 93A-1 exists in P6521).

Some cross-references point to this figure (correctly).and should be updated (label only).

SuggestedRemedy

Change figure number, cross-references will update

Response *Response Status* **C**

ACCEPT.

Cl **1** *SC* **1.3** *P* **178** *L* **51** # 83

Ran, Adee Cisco

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

MATLAB brand name should be spelled in all-caps, as in all other places in the document

SuggestedRemedy

Change MatLab to MATLAB

Response *Response Status* **C**

ACCEPT.

Cl **120D** *SC* **120D.3.2** *P* **6640** *L* **36** # 84

Ran, Adee Cisco

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

The reference to 93.8.1.4 is incorrect - that is a transmitter characteristics subclause.

The equation is in 93.8.2.2 "Receiver input return loss".

SuggestedRemedy

Change reference from 93.8.1.4 to 93.8.2.2.

Response *Response Status* **C**

ACCEPT.

Cl **85** *SC* **85.8.3.3.5** *P* **3514** *L* **8** # 85

Ran, Adee Cisco

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

"The error waveform, e(k), is then read column-wise from the elements of E as shown in Equation (85-8)."

E is not defined prior to this sentence; it is actually defined by the equation.

SuggestedRemedy

Change the quoted sentence to "The error waveform, e(k), is then read column-wise from the elements of the error matrix E defined by Equation (85-8)."

Response *Response Status* **C**

ACCEPT.

Cl **96** *SC* **96.5.1.1** *P* **3896** *L* **49** # 86

Ran, Adee Cisco

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

"common mode" and "differential mode" (used here as adjectives) should be spelled with a hyphen.

Also in 96.7.1.4, 97.6.1.4, 97.11.11.1, 97A.1, 97A.2, 97A.3, 97A.3.2.2, 97A.3.3, 97B.1.1, 97B.2.

SuggestedRemedy

Change to "common-mode" and "differential-mode" in all listed subclauses.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

[Editor's note: Page changed to 3896]

Change to "common-mode" and "differential-mode" in 96.5.1.1, 97A.2, 97A.3, 97A.3.2.2, and 97B.2.

In 96.7.1.4, 97.6.1.4, 97.11.11.1, 97A.1, and 97A.3.3:

Change all occurrences of “common mode to differential mode” to “common-to-differential-mode”

Change all occurrences of “differential to common mode” to “differential-to-common-mode”

Change all occurrences of “differential mode to common mode” to “differential-to-common-mode”

Cl **146** *SC* **146.5.1.1** *P* **5832** *L* **13** # 87

Ran, Adee Cisco

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

"common mode" and "differential mode" (used here as adjectives) should be spelled with a hyphen.

Also in 146.7.1.4, 146.11.4.4, 147.5.1.1.

SuggestedRemedy

Change to "common-mode" and "differential-mode" in all listed subclauses.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change 146.5.1.1 and 147.5.1.1 per suggested remedy.
In 146.7.1.4 and 146.11.4.4 change “differential to common mode” to “differential-to-common-mode”

Cl **145** *SC* **145.2.10.6.1** *P* **5685** *L* **21** # 88

Ran, Adee Cisco

Comment Type **E** *Comment Status* **A** *CM, bucket*

"common mode" (used here as an adjective) should be spelled with a hyphen.

Applies to several occurrences of this phrase in this subclause.

Also in 145A.2, 145A.3, 145A.5.

SuggestedRemedy

Change to "common-mode" in all listed subclauses.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change "common mode" to "common-mode" when used as a compound adjective in 145.2.10.6.1, 145A.2, 145A.3, and 145A.5.

Cl **83E** *SC* **83E.3.2** *P* **6470** *L* **27** # 89

Ran, Adee Cisco

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

"common mode" (used here as an adjective) should be spelled with a hyphen.

Applies to several occurrences of this phrase in this subclause.

Also in 83E.3.4.

SuggestedRemedy

Change to "common-mode" in both subclauses.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change "common mode voltage" to "common-mode voltage" at the following locations:
Table 83E-3, page 6470, lines 27, 29, and 30
Table 83E-7, page 6475, lines 39, 40, and 43

Change "Common to differential mode conversion return loss" to "Common-to-differential-mode output return loss" in the following locations:
Table 83E-1, page 6465, line 23
Table 83E-3, page 6470, line 22
83E.3.1.3, page 6466, line 51
Figure 83E-8, page 6467, vertical axis label

Change 83E.3.1.3, page 6466, line 38 from:
"Common to differential output conversion return loss, in dB, of the output is shown..."
to:
"Common-to-differential-mode output return loss, in dB, is shown..."

Change the title of Figure 83E-8 to be "Common-to-differential-mode output return loss".

Change "Differential to common-mode input return loss" to "Differential-to-common-mode input return loss" at the following locations:
Table 83E-4, page 6471, line 42
Table 83E-7, page 6475, line 32
83E.3.3.1, page 6472, lines 16 and 29
Figure 83E-13 title and vertical axis label

Cl **120D** SC **120D.3.2** P **6640** L **36** # 90

Ran, Adee Cisco

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

"common mode" (used here as an adjective) should be spelled with a hyphen.

Also in 120D.5.4.2, 120E.3.2, 120E.3.3, 120E.3.4,

SuggestedRemedy

Change to "common-mode" in both subclauses.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change "common mode voltage" to "common-mode voltage" at the following locations:
Table 120E-3, page 6658, lines 12, 14, and 15
Table 120E-7, page 6662, lines 30, 31, and 34

Change "Common to differential mode conversion return loss" to "Common-to-differential-mode output return loss" in Table 120E-3, page 6658, line 7.

Change "Differential to common mode input return loss" to "Differential-to-common-mode input return loss" at the following locations:
Table 120D-5, page 6640, line 36
120D.5.4.2, page 6648, line 7
Table 120E-4, page 6659, line 39
Table 120E-7, page 6662, line 23

Cl **109A** SC **109A.5.4.2** P **6570** L **8** # 91

Ran, Adee Cisco

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

"common mode" (used here as an adjective) should be spelled with a hyphen, as in the reference subclause 93.8.2.2.

SuggestedRemedy

Change to "common-mode".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Differential-to-common-mode is a single compound adjective.

Change "Differential to common mode" to "Differential-to-common-mode".

Cl **40** SC **40.11.2** P **1649** L **30** # 92

Ran, Adee Cisco

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

"worse-case"

SuggestedRemedy

Change to "worst-case"

Response *Response Status* **C**

ACCEPT.

Cl **59** SC **59.6** P **2699** L **19** # 93

Ran, Adee Cisco

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

"worse case"

SuggestedRemedy

Change to "worst-case"

Response *Response Status* **C**

ACCEPT.

Cl **55B** SC **55B.1** P **6283** L **45** # 94

Ran, Adee Cisco

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

"worse case"

SuggestedRemedy

Change to "worst-case"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change "worse case" to "worst case".

Cl **27** *SC* **27.7.4.12** *P* **923** *L* **18** # 95

Ran, Adee Cisco

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

"Worse-case"
Also L20 and L23

SuggestedRemedy

Change to "Worst-case" three times

Response *Response Status* **C**

ACCEPT.

Cl **41** *SC* **41.6.4.12** *P* **1694** *L* **15** # 96

Ran, Adee Cisco

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

"Worse-case"
Also L17 and L20

SuggestedRemedy

Change to "Worst-case" three times

Response *Response Status* **C**

ACCEPT.

Cl **93** *SC* **93.8.1.5.2** *P* **3758** *L* **26** # 97

Ran, Adee Cisco

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

[refer to 85.8.3.3 step 3)]

Square brackets in text are unconventional.

SuggestedRemedy

Change to regular (parentheses) without extra closing brace after "3"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change "[refer to 85.8.3.3 step 3)]" to: "(refer to 85.8.3.3 step 3)".
Make "3" a cross-reference to step 3 in 85.8.3.3.

Cl **136** *SC* **136.8.11.7.5** *P* **5297** *L* **6** # 98

Ran, Adee Cisco

Comment Type **T** *Comment Status* **A** *PMD control*

As has been discussed in 802.3ck, implementation of the PMD control state diagram in Figure 136-7 can create deadlock situations if it is used without auto-negotiation, and one of the link partners goes through a reset while in either TRAIN_LOCAL or TRAIN_REMOTE (which is compliant behavior).

This was remedied in 802.3ck by adding a new QUIET state and a variable lost_training_lock to the PMD control function in clause 136. Since the scope of 802.3ck does not include existing 50 Gb/s per lane PHYs, a control variable, use_quiet_in_training, was added, which is "always set to FALSE" for 50 Gb/s per lane PHYs. However, implementation of the change in a 50 Gb/s per lane PHYs would be preferrable and interoperable with devices that do not implement it.

To enable newer implementations of 50 Gb/s per lane to solve the deadlock issue, it is proposed to adopt the change to 802.3ck in this revision, rather than waiting for completion of 802.3ck, and allow either TRUE or FALSE for the control variable. 802.3ck will enforce TRUE for higher than 50 Gb/s per lane PHYs (which are not specified in this revision).

For reference, see comment #1 in https://www.ieee802.org/3/ck/comments/draft1p3/8023ck_D1p3_final_closedcomments_sortedByNumber.pdf.

SuggestedRemedy

Implement all the changes to clause 136 defined in 802.3ck (D2.1), with the exception that in the definition of "use_quiet_in_training", the second sentence "This variable is always set to FALSE for 50 Gb/s per lane PHYs, otherwise it is
set to TRUE" is replaced by "The value of this variable is implementation-dependent".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Implement the suggested remedy with the exception that "implementation-dependent" is replaced by "implementation dependent".

Cl **136** *SC* **136.9.3.1.2** *P* **5303** *L* **22** # 99

Ran, Adee Cisco

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

In "p(M×Nv)" p should be italicized

SuggestedRemedy

per comment

Response *Response Status* **C**

ACCEPT.

Cl **136** *SC* **136.9.4.2.4** *P* **5307** *L* **44** # 100

Ran, Adee Cisco

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

In first "Q3" Q should be italicized

SuggestedRemedy

per comment

Response *Response Status* **C**

ACCEPT.

Cl **83E** *SC* **83E.3.2** *P* **6470** *L* **27** # 101

Ran, Adee Cisco

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

In Table 83E-3 module output characteristics, The row "DC common mode voltage" makes little sense, because modules are required to be AC coupled.

Footnote a says DC common mode voltage is generated by the host. The values create a slightly wider range than the allowed host output (Table 83E-1). This suggests that the intended specification is DC common mode _tolerance_. If that is the case, it should be stated clearly to avoid likely misunderstanding.

This issue is the subject of comment 49 submitted against 802.3ck D2.1 (see ran_3ck_02a_0721) which was accepted in principle. The change (to be implemented in D2.2) is adding new subclauses to specify the tolerance requirements in detail.

Also applies to module input in Table 83E-7.

SuggestedRemedy

Preferably implement a similar change to the resolution to comment 49 against 802.3ck D2.1 (to be implemented in D2.2).

Alternatively:

In the parameter names change "common-mode voltage" to "common-mode voltage tolerance";

Change the footnote to
"DC common-mode voltage is generated by the host. A module is required to meet all output specifications with any DC common-mode voltage within the specified range driven at TP4";

And apply similarly in Table 83E-7, but with "input" and "TP1" instead of "output" and "TP4".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

In Table 83E-3, change "DC common mode voltage" to "DC common-mode voltage tolerance" (2 instances). Replace the text of note "a" with the following: "DC common-mode voltage is generated by the host. A compliant module meets the output specifications with any DC common-mode voltage within the specified range applied at TP4. The specification includes effects of ground offset voltage."

In Table 83E-7, change "DC common mode voltage" to "DC common-mode voltage tolerance" (2 instances). Replace the text of note "b" with the following: "DC common-mode voltage is generated by the host. A compliant module meets the input specifications with any DC common-mode voltage within the specified range applied at TP1. The specification includes effects of ground offset voltage."

Cl **38** *SC* **38.2.4** *P* **1510** *L* **25** # 102

Ran, Adee Cisco

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

"As an unavoidable consequence of the requirements for the setting of the SIGNAL_DETECT parameter, implementations must provide adequate margin between the input optical power level at which the SIGNAL_DETECT parameter is set to OK, and the inherent noise level of the PMD due to cross talk, power supply noise, etc."

There is no unavoidable consequence here, and "must" is out of place. Implementations should provide adequate margin, but there is no definition of what is adequate, so this is not even a normative statement - rather a general recommendation of engineering practice.

This sentence is inherited by many other clauses. Recently, 802.3cp used a different phrasing for this recommendation in 158.5.4 (as a result of comment #26 against D2.2 and comment i-30 against D3.0). The new phrasing is stated clearly as a recommendation without "must".

Also in 39.2.3, 52.4.4, 53.4.4, 58.2.4, 59.2.4, 68.4.4, 86.5.4, 87.5.4, 88.5.4, 89.5.4, 95.5.4, 112.5.4, 114.5.4, 121.5.4, 122.5.4, 123.5.4, 124.5.4, 138.5.4, 139.5.4, 140.5.4, 150.5.4, and 151.5.4.

SuggestedRemedy

Change the quoted sentence to
"Implementations should provide adequate margin between the input optical power level at which the SIGNAL_DETECT parameter is set to OK, and the inherent noise level of the PMD including the effects of crosstalk, power supply noise, etc.".

Implement in all listed subclauses.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Resolve with comment #17.

Cl **00** *SC* **0** *P* *L* # 103

Ghiasi, Ali Ghiasi Quantum/Marvell

Comment Type **TR** *Comment Status* **A** *equations, bucket*

All equations in the document are garbled if one uses Apple Preview and this was not an issue with 802.3 2019

SuggestedRemedy

Please correct this issue so one could use either Acrobat or other readers to view the standard.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

The method used to produce PDF files will be modified for future drafts to try to address this issue.

Cl **120D** *SC* **120D.3.2.2** *P* **6642** *L* **35** # 104

Ghiasi, Ali Ghiasi Quantum/Marvell

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

Case B at 0.4 MHz was added due to risk of scape and peaking in the band from 0.04 MHz to 1.333 MHz, but even after adding test case B the difference between test case A and B is a decade where PLL peaking may result in system failure. All other points in the table are separated by 3.3x with exception of point A to B which is a decade.

SuggestedRemedy

Please add one additional point between A and B at 0.1333 MHz with amplitude of 1.5 UI.

Response *Response Status* **W**

REJECT.

A similar proposal to add the (0.1333 MHz, 1.5 UI) test case to the PHYs and interfaces being defined by the P802.3ck Task Force was not accepted. See the response to comment #35 in <https://www.ieee802.org/3/ck/comments/draft2p0/8023ck_D2p0_final_closedcomments.pdf#page=46>.

No data has been provided to demonstrate that a practical receiver that meets the jitter tolerance test conditions defined in the draft will not interoperate with a compliant transmitter and channel. No data has been provided to demonstrate that the addition of the proposed test case provides a higher assurance of interoperability.

No change to the draft.

Cl **120E** *SC* **120E.3.3.2.1** *P* **6660** *L* **38** # 105

Ghiasi, Ali — Ghiasi Quantum/Marvell

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

Case B at 0.4 MHz was added due to risk of scape and peaking in the band from 0.04 MHz to 1.333 MHz, but even after adding test case B the difference between test case A and B is a decade where PLL peaking may result in system failure. All other points in the table are separated by 3.3x with exception of point A to B which is a decade.

SuggestedRemedy

Please add one additional point between A and B at 0.1333 MHz with amplitude of 1.5 UI.

Response *Response Status* **W**

REJECT.

A similar proposal to add the (0.1333 MHz, 1.5 UI) test case to the PHYs and interfaces being defined by the P802.3ck Task Force was not accepted. See the response to comment #35 in <https://www.ieee802.org/3/ck/comments/draft2p0/8023ck_D2p0_final_closedcomments.pdf#page=46>.

No data has been provided to demonstrate that a practical receiver that meets the jitter tolerance test conditions defined in the draft will not interoperate with a compliant transmitter and channel. No data has been provided to demonstrate that the addition of the proposed test case provides a higher assurance of interoperability.

No change to the draft.

Cl **85** *SC* **85.10.7** *P* **3527** *L* **27** # 106

Ghiasi, Ali — Ghiasi Quantum/Marvell

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

Equation 85-28 .sinc(fn/fb)^2.the power of ^2 is wrong location

SuggestedRemedy

Please update equation 85-28 to the following notation .sinc^2(fn/fb).

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Equations 92-44 and 92-45 use the same notation as the suggested remedy.

Both equation 85-28 and equation 85-29 use a possibly ambiguous notation.

Change the equation based on the suggested remedy and apply a similar change in equation 85-29.

Cl **85** *SC* **85.10.7** *P* **3527** *L* **31** # 107

Ghiasi, Ali — Ghiasi Quantum/Marvell

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

Equation 85-29 .sinc(fn/fb)^2.the power of ^2 is wrong location

SuggestedRemedy

Please update equation 85-29 to the following notation .sinc^2(fn/fb).

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See the response to comment #106.

Cl **33** *SC* **33.4.9.1** *P* **1359** *L* **12** # 108

Maguire, Valerie — Siemon

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

The proposed resolution to Maintenance comment #1311 was revised from the original submittal, but the new text still doesn't read clearly. Maybe, there's an "a" missing before connector? Also, "equipment" after "PSE" is redundant. And, "telecom connectors" isn't a recognized term, nor is it used anywhere other than in this location and its PIC call-out.

SuggestedRemedy

On page 1359, line 12: Replace, "The Midspan PSE equipment to be inserted as connector or telecom outlet shall meet the following transmission parameters." with "The Midspan PSE to be inserted as a connector shall meet the following transmission parameters." On page 1389, change the PSEEL9 entry from, "Midspan PSE inserted as a "connector" or "telecom outlet"" to, "Midspan PSE inserted as a
connector". (Note: this change also removes the quotes around "connector" in the PICS call-out.)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

On page 1359, line 12: Replace, "The Midspan PSE equipment to be inserted as connector or telecom outlet shall meet the following transmission parameters." with "The Midspan PSE to be inserted as a connection or telecommunications outlet shall meet the following transmission parameters."

On page 1389, change the PSEEL9 entry from, "Midspan PSE inserted as a "connector" or "telecom outlet" to, "Midspan PSE inserted as a
"connection" or "telecommunications outlet".

Cl **93A** *SC* **93A.5.2** *P* **6536** *L* **10** # 109

Healey, Adam Broadcom Inc.

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

The single instance of "N_b" In Equation (93A-61) should be "N_bx".

SuggestedRemedy

Change "t >= T_fx+(N_b+1)/f_b" to "t >= T_fx+(N_bx+1)/f_b".

Response *Response Status* **W**

ACCEPT.

Cl **00** *SC* **0** *P* *L* # 110

Healey, Adam Broadcom Inc.

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

IEEE Std 802.3cp-2021 and IEEE Std 802.3ct-2021 are approved (and published) amendments to IEEE Std 802.3-2018 that should be included in this revision.

SuggestedRemedy

Incorporate IEEE Std 802.3cp-2021 and IEEE Std 802.3ct-2021 into the draft.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Incorporate IEEE Std 802.3cp-2021 and IEEE Std 802.3ct-2021 into the draft using editorial license to resolve any conflicts between the change instructions in those amendments, the current state of the draft, and changes made in response to other comments. Update the front-matter to account for the inclusion of these amendments.

Cl **60** *SC* **60.9.13.2.2** *P* **2744** *L* **1** # 111

Healey, Adam Broadcom Inc.

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

The issue with sentence(s) modified by Maintenance Request #1318 does not appear to be the parentheses but rather that the phrase should have ended with a colon (leading to the text that follows describing the procedure) rather than a full stop. Additional editorial work can make this text more cohesive and better communicate the intent.

SuggestedRemedy

Replace the last two paragraphs of 60.9.13.2.2 and 75.7.15.2, with the following text.
"The following procedure is a non-rigorous way to verify the declared Treceiver_settling time.
a) Use a reference transmitter with a known Ton.
b) For the PMD receiver under test, measure all PMD receiver electrical parameters at TP8 after Treceiver_settling from the TX_ENABLE trigger minus the reference transmitter Ton.
c) Verify the conformance of the measured parameters to within 15% of their specified steady state values."

Response *Response Status* **C**

ACCEPT.

Cl **80** *SC* **80.2.5** *P* **0** *L* **0** # 112

Brown, Matt Huawei

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

This comment assumes that 802.3ct is incorporated into 802.3dc in the next draft. 802.3ct 80.2.5 text reads: "The 40GBASE-R, 100GBASE-R, and 100GBASE-P PMDs and their corresponding media are specified in Clause 84 through Clause 89, Clause 92 through Clause 95, Clause 136 through Clause 138, Clause 140, and Clause 154." The Clause 154 PHY is defined elsewhere as a type 100GBASE-Z which is not listed in the PHY types in this sentence.

SuggestedRemedy

Change the sentence to: " "The 40GBASE-R, 100GBASE-R, 100GBASE-P, and 100GBASE-Z PMDs and their corresponding media are specified in Clause 84 through Clause 89, Clause 92 through Clause 95, Clause 136 through Clause 138, Clause 140, and Clause 154."

Response *Response Status* **C**

ACCEPT.

Cl **116** *SC* **116.1.4** *P* **4779** *L* **25** # 113

Brown, Matt Huawei

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

In Table 116-5 and similar tables, the convention for ordering the PHY types seems to be to put the interfaces with higher lane count first, e.g., SR16 is before SR8, FR8 is before FR4.

SuggestedRemedy

In Table 116-5, swap rows for 400GBASE-LR4-6 and 400GBASE-LR8.

Response *Response Status* **C**

REJECT.

The convention for ordering the PHY types in tables such as this is to order first by reach and then by lane count.
400GBASE-LR4-6 has a reach of 6 km and 400GBASE-LR8 has a reach of 10 km so the order is correct as it is.

Cl **116** *SC* **116.1.4** *P* **4779** *L* **9** # 114

Brown, Matt Huawei

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

In Table 116-5, the columns are unecessarily ordered by rate and lane width. To align better with other similar tables sort the columns by Clause. I don't think it's necessary to have the "M" in a perfect diagonal.

SuggestedRemedy

In Table 116-5, sort columns by clause number. When multiple PMDs are defined by the same clause then sort the same as the rows.

Response *Response Status* **C**

REJECT.

Table 116-5 is technically correct as currently presented. There was no agreement that sorting the columns in clause order was a significant improvement to the draft.

Cl **116** *SC* **116.1.4** *P* **4778** *L* **27** # 115

Brown, Matt Huawei

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

In table 116-4, in the right-most column the clause number "138" appears twice.

SuggestedRemedy

Delete one instance of "138".

Response *Response Status* **C**

ACCEPT.

Cl **69** *SC* **69.1.2** *P* **2986** *L* **36** # 116

Brown, Matt Huawei

Comment Type **E** *Comment Status* **A** *Introduction clauses*

The list of exceptions to bus widths are already defined in the Ethernet rate introductions clauses and is unecessarily repeated in Clause 69. This can result in variance between the two subclauses, but also adds extra editorial work when new backplane PHYs are defined. Given that the list of backplane PHYs is growing with 802.3ck and likely with B400G, trimming the revision in this way would be helpful.

SuggestedRemedy

Remove the detailed list of bus width sections and instead reference the alternate location, e.g.,:
For 40 Gigabit Ethernet and 100 Gigabit Ethernet exceptions are listed in 80.1.3.
For 200 Gigabit Ethernet and 400 Gigabit Ethernet exceptions are listed in 116.1.2.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change the paragraph starting with "It is important to note that" and ending with "The only exceptions are as follows:" to (with editorial license):

"While this specification defines interfaces in terms of bits, octets, and frames, implementers may choose other data-path widths for implementation convenience. Exceptions are described in the clauses related to specific Backplane Ethernet PHY types."

Delete the subsequent lettered list.

Cl **69** *SC* **69.2.3** *P* **2988** *L* **43** # 117

Brown, Matt Huawei

Comment Type **E** *Comment Status* **A** *Introduction clauses*

The nomenclature tables in 69.2.3 unnecessarily repeat tables that are already provided elsewhere. This can result in variance between the two subclauses, but also adds extra editorial work when new backplane PHYs are defined. Given that the list of backplane PHYs is growing with 802.3ck and likely with B400G, trimming the revision in this way would be helpful.

SuggestedRemedy

Remove the nomenclature tables from 69.2.3 and instead reference the relevant tables provided elsewehere, e.g.,
For 40 Gigabit Ethernet see Table 80-2.
For 100 Gigabit Ethernet see Table 80-3.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Table 69-1 includes 1000BASE-KX, 10GBASE-KX4, and 10GBASE-KR, which do not appear in any other similar table.

However, the subsequent tables repeat information that exists in other tables, and can be replaced by references, for easier maintenance.

Change the sentence
"Table 69-1, Table 69-2, Table 69-3, Table 69-4, Table 69-5, Table 69-6, and Table 69-7 specify the correlation between nomenclature and clauses."
To
"Table 69-1 specifies the correlation between nomenclature and clauses for 1 Gb/s and 10 Gb/s backplane Ethernet. For other backplane PHY types, refer to Table 125-2 (2.5 Gb/s and 5 Gb/s), Table 105-1 (25 Gb/s), Table 80-2 (40 Gb/s), Table 131-2 (50 Gb/s), Table 80-3 (100 Gb/s), and Table 116-3 (200 Gb/s)."

Delete Table 69-2, Table 69-3, Table 69-4, Table 69-5, Table 69-6, and Table 69-7.

Cl **116** *SC* **116.1.2** *P* **4776** *L* **23** # 118

Brown, Matt Huawei

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

The list of interfaces with each lane-width is becoming exceeding long. Reading through this list is tireseome. Readability and maintainability can be improved by using sublists. A general convention for lists is to use a bulleted list once the list exceeds 3 items.

SuggestedRemedy

In 116.1.2, 80.1.3, 69.1.2 for exception items with more that two interface types, use sub-bullets. e.g., for 116.1.2 item h)
h) MDIs using a 4-lane data path as specified in:
-- Clause 121 for 200GBASE-DR4
-- Clause 122 for 200GBASE-FR4, 200GBASE-LR4, and 200GBASE-ER4
-- Clause 124 for 400GBASE-DR4
-- Clause 136 for 200GBASE-CR4
-- Clause 137 for 200GBASE-KR4
-- Clause 138 for 200GBASE-SR4
-- Clause 151 for 400GBASE-FR4 and 400GBASE-LR4-6

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

In 80.1.3 change list items h), i), k), and m) to:
h) The MDIs as specified in:
-- Clause 89 for 40GBASE-FR
-- Clause 140 for 100GBASE-DR, 100GBASE-FR1, and 100GBASE-LR1
-- Clause 154 for 100GBASE-ZR
use a single lane data path.
i) The MDIs as specified in:
-- Clause 85 for 40GBASE-CR4
-- Clause 86 for 40GBASE-SR4
-- Clause 87 for 40GBASE-LR4 and 40GBASE-ER4
-- Clause 88 for 100GBASE-LR4 and 100GBASE-ER4
-- Clause 92 for 100GBASE-CR4
-- Clause 95 for 100GBASE-SR4
all use a 4 lane data path.
...
K) Although there is no electrical or mechanical specification of the MDI for backplane Physical Layers, the PMDs as specified in:
-- Clause 84 for 40GBASE-KR4
-- Clause 93 for 100GBASE-KR4
-- Clause 94 for 100GBASE-KP4
all use a 4 lane data path.
...
M) The MDIs as specified in:
-- Clause 136 for 100GBASE-CR2
-- Clause 137 for 100GBASE-KR2
-- Clause 138 for 100GBASE-SR2

all use a 2 lane data path.

In 116.1.2 change list items g) and h) to:
g) The MDIs as specified in:
-- Clause 122 for 400GBASE-FR8, 400GBASE-LR8, and 400GBASE-ER8
-- Clause 138 for 400GBASE-SR8
-- Clause 150 for 400GBASE-SR4.2
all use an 8-lane data path.
H) The MDIs as specified in:
-- Clause 121 for 200GBASE-DR4
-- Clause 122 for 200GBASE-FR4, 200GBASE-LR4, and 200GBASE-ER4
-- Clause 124 for 400GBASE-DR4
-- Clause 136 for 200GBASE-CR4
-- Clause 137 for 200GBASE-KR4
-- Clause 138 for 200GBASE-SR4
-- Clause 151 for 400GBASE-FR4 and 400GBASE-LR4-6
all use a 4-lane data path.

Make no change in 69.1.2, which may be changed by the response to comment #116.

Cl **116** *SC* **116.1.4** *P* **4777** *L* **50** # 119

Brown, Matt Huawei

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

For IEEE 802.3 standards, the word "must" is deprecated.

SuggestedRemedy

Change: "Implementations conforming to one or
more PHY types must meet the requirements of the corresponding clauses."
To: "Implementations conforming to one or
more PHY types meet the requirements of the corresponding clauses."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #17.

Cl **116** *SC* **116.4** *P* **4784** *L* **52** # 120

Brown, Matt Huawei

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

For IEEE 802.3 standards, the word "must" is deprecated. Also, it is not the implementor but rather the implementation that needs to conform.

SuggestedRemedy

Change: "This implies that MAC, MAC Control
sublayer, and PHY implementers must conform to"
To: "This requires that MAC, MAC Control
sublayer, and PHY implementions conform to"
Apply similarly to 80.4, 131.4.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #17.

Cl **116** *SC* **116.5** *P* **4786** *L* **31** # 121

Brown, Matt Huawei

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

For IEEE 802.3 standards, the word "must" is deprecated.

SuggestedRemedy

Change: "The Skew between the lanes must be kept within limits as shown in Table 116-8
so that the transmitted information on the lanes can be reassembled by the receive PCS."
To: "The Skew between the lanes is kept within limits as shown in Table 116-8 so that the
transmitted information on the lanes can be reassembled by the receive PCS."
Apply similarly to 80.5, 131.5.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #17.

Cl **116** *SC* **116.7** *P* **4791** *L* **44** # 122

Brown, Matt Huawei

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

For IEEE 802.3 standards, the word "must" is deprecated.

SuggestedRemedy

Change: "An exit transition arrow must connect to the shared arrow, and the qualifier must be met prior to termination of the transition arrow on the shared arrow."
To: "An exit transition arrow connects to the shared arrow, and the qualifier is met prior to termination of the transition arrow on the shared arrow."
Apply similarly in 80.6, 131.6.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #17.

Cl **80** *SC* **80.1.2** *P* **3359** *L* **17** # 123

Brown, Matt Huawei

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

It is no longer necessary to retain subclause 80.1.2.

SuggestedRemedy

Delete subclause 80.1.2.

Response *Response Status* **C**

REJECT.

When the content was removed from subclause 80.1.2 by IEEE Std 802.3bj-2014 the heading was retained and the note inserted so that the subclause numbering for Clause 80 was not affected by the change. This means that any references there may be from outside 802.3 remain valid.

Cl **80** *SC* **80.1.4** *P* **3361** *L* **26** # 124

Brown, Matt Huawei

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

All 100GBASE-P physical layer devices use the Clause 91 RS-FEC.

SuggestedRemedy

Change: "Some 100GBASE-P Physical Layer devices also use the transcoding and FEC of Clause 91."
To: "100GBASE-P Physical Layer devices also use the transcoding and FEC of Clause 91."

Response *Response Status* **C**

ACCEPT.

Cl **80** *SC* **80.1.5** *P* **3363** *L* **16** # 125

Brown, Matt Huawei

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

Table 80-2 lists "XLAUI" for both annex 83A and 83B. It would be helpful to differentiate the two.

SuggestedRemedy

Under 83A, change "XLAUI" to "XLAUI C2C".
Under 83B, change "XLAUI" to "XLAUI C2M".

Response *Response Status* **C**

ACCEPT.

Cl **80** *SC* **80.1.5** *P* **3364** *L* **13** # 126

Brown, Matt Huawei

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

Table 80-3 lists "CAUI-10" and "CAUI-4" but does not qualify as chip-to-chip.

SuggestedRemedy

Under 83A, change "CAUI-10" to "CAUI-10 C2C".
Under 83D, change "CAUI-4" to "CAUI-4 C2C".

Response *Response Status* **C**

ACCEPT.

Cl **80** *SC* **80.1.5** *P* **3364** *L* **41** # 127

Brown, Matt Huawei

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

Table 80-4 and Table 80-5 list "CAUI-10" and "CAUI-4" but does not qualify as chip-to-chip (C2C) or chip-to-module (C2M).

SuggestedRemedy

Under 83A, change "CAUI-10" to "CAUI-10 C2C".
Under 83B, change "CAUI-10" to "CAUI-10 C2M".
Under 83D, change "CAUI-4" to "CAUI-4 C2C".
Under 83E, change "CAUI-4" to "CAUI-4 C2M".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

[Editor's note: Line changed from 13 to 41.]

Apply suggested remedy to both Table 80-4 and Table 80-5.

Cl **84** *SC* **84.1** *P* **3484** *L* **32** # 128

Brown, Matt Huawei

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

For IEEE 802.3 standards, the word "must" is deprecated. Note that this was addressed by 802.3cu for Table 140-1 and Table 151-1.

SuggestedRemedy

In Table 84-1 footnote "a", change "must behave functionally" to "behaves functionally".
Apply similarly to the following tables:
53-1, 54-1, 70-1, 71-1, 72-1, 85-1, 86-1, 87-1, 88-1, 89-1, 92-1, 93-1, 94-1, 95-1, 110-1, 111-1, 112-1, 114-1, 121-1, 122-1, 123-1, 124-1, 128-1, 130-1, 136-1/2/3, 137-1/2/3, 138-1/2/3, 139-1, 150-1

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #17.

Cl **120** *SC* **120.5.3** *P* **4859** *L* **21** # 129

Brown, Matt Huawei

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

For IEEE 802.3 standards, the word "must" is deprecated.

SuggestedRemedy

Change: "The Skew (relative delay) between the PCSLs must be kept within limits"
To: "The Skew (relative delay) between the PCSLs is kept within limits"
Also, on line 24...
Change: "Any PMA that combines PCSLs from different input lanes onto the same output lane must tolerate Skew Variation"
To: "Any PMA that combines PCSLs from different input lanes onto the same output lane tolerates Skew Variation"
Apply similarly to 135.5.3, 136.6, 137.6, 138.3.2, 139.3.2, 140.3.2.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #17.

Cl **121** *SC* **121.3.2** *P* **4883** *L* **30** # 130

Brown, Matt Huawei

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

For IEEE 802.3 standards, the word "must" is deprecated.

SuggestedRemedy

Change: "Skew Variation must be kept within limits"
To: "Skew Variation is kept within limits"
Apply similarly in 122.3.2, 123.3.2, 124.3.2.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #17.

Cl **121** *SC* **121.7.1** *P* **4888** *L* **46** # 131

Brown, Matt Huawei

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

For IEEE 802.3 standards, the word "must" is deprecated.

SuggestedRemedy

Reword footnote "b"without the word "must".
Apply similarly in Tables 122-9, 122-10, 124-6, 138-8, 139-6.
Sorry I couldn't think of appropriate alternate wording.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #17.

Cl **121** *SC* **121.8.5.3.** *P* **4893** *L* **21** # 132

Brown, Matt Huawei

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

For IEEE 802.3 standards, the word "must" is deprecated.

SuggestedRemedy

Change: "must be compensated for"
To: "is compensated for"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

[Editor's note: Line changed from 46 to 21.]

See response to comment #17.

Cl **121** *SC* **121.11** *P* **4904** *L* **19** # 133

Brown, Matt Huawei

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

For IEEE 802.3 standards, the word "must" is deprecated.

SuggestedRemedy

Change "system must tolerate"
To "system tolerates"
Apply similarly in Tables 122-17, 124-11, 139-12.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #17.

Cl **131** *SC* **131.1.4** *P* **5203** *L* **4** # 134

Brown, Matt Huawei

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

For IEEE 802.3 standards, the word "must" is deprecated.

SuggestedRemedy

Change "must meet the requirements"
To "meet the requirements"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #17.

Cl **131** *SC* **131.5** *P* **5208** *L* **6** # 135

Brown, Matt Huawei

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

For IEEE 802.3 standards, the word "must" is deprecated.

SuggestedRemedy

Change: "Skew Variation must be limited"
Change: "Skew Variation is limited"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See response to comment #17.

Cl **1** *SC* **1.4.55** *P* **183** *L* **2** # 136

Trowbridge, Steve Nokia

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

"comprised of" is incorrect English language usage that has been avoided in publication of most recent amendments. 43 historical instances exist in the base standard.

SuggestedRemedy

Change "comprised of" to "composed of" (43 instances, also page 208 line 2, page 275 line 9, page 298 line 20, page 330 line 3, page 403 line 14, page 829 line 8, page 836 line 9, page 851 line 45, page 852 line 22, page 863 line 29, page 870 line 15, page 987 line 20, page 1369 line 28, page 1421 line 22, page 1431 line 50, page 1508 line 48, page 2203 line 38, page 2206 line 54, page 2232 line 20, page 2274 line 26, page 2406 line 43, page 2500 line 23, page 2897 line 19, page 3129 line 17, page 3281 line 24, page 3304 line 25, page 3432 line 25, page 3674 line 32, page 3906 line 41, page 3951 line 49, page 3967 line 34, page 4077 line 21, page 4576 line 18, page 4742 line 51, page 5742 line 7, page 5961 line 4, page 5961 line 49, page 6272 line 15, page 6412 line 4, page 6826 line 39

Response *Response Status* **W**

ACCEPT.

Cl **22** *SC* **22.8.3.5** *P* **742** *L* **8** # 137

Trowbridge, Steve Nokia

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

Wrong word

SuggestedRemedy

Change "not effected" to "not affected"

Response *Response Status* **W**

ACCEPT.

Cl **1** *SC* **1.4.40** *P* **181** *L* **52** # 138

Huber, Tom Nokia

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

For consistency with the other definitions for optical PHYs, the reach should be specified.

SuggestedRemedy

Add "with reach up to at least 100 m" to the end of the sentence, before the parenthetical reference to clause 138.

Response *Response Status* **C**

ACCEPT.

Cl **1** *SC* **1.4.104** *P* **185** *L* **53** # 139

Huber, Tom Nokia

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

For consistency with the other definitions for optical PHYs, the reach should be specified.

SuggestedRemedy

Add "with reach up to at least 100 m" to the end of the sentence, before the parenthetical reference to clause 138.

Response *Response Status* **C**

ACCEPT.

Cl **1** *SC* **1.4.164** *P* **190** *L* **8** # 140

Huber, Tom Nokia

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

For consistency with the other definitions for optical PHYs, the reach should be specified.

SuggestedRemedy

Add "with reach up to at least 100 m" to the end of the sentence, before the parenthetical reference to clause 138.

Response *Response Status* **C**

ACCEPT.

Cl **116** *SC* **116.1.4** *P* **4778** *L* **27** # 141

Huber, Tom Nokia

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

The column heading for the last column is "138 138"

SuggestedRemedy

Change to 138

Response *Response Status* **C**

ACCEPT.

Cl **125** *SC* **125.1.3** *P* **4988** *L* **7** # 142

Huber, Tom Nokia

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

The added text for 2.5GBASE-X and 5GBASE-R does not follow the same pattern as the existing text for other PHY types. For consistency it would be better to use the same form.

SuggestedRemedy

Change "The term 2.5GBASE-X." to "2.5GBASE-X", and make the same change in the next paragraph wrt 5GBASE-R.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Pg 4988/line 7: Change "The term 2.5GBASE-X refers to a specific family of Physical Layer implementations" to "2.5GBASE-X refers to a specific family of Physical Layer devices"

Pg 4988/line 11: Change "The term 5GBASE-R refers to a specific family of Physical Layer implementations" to "5GBASE-R refers to a specific family of Physical Layer devices"

Cl **120** *SC* **120.5.7.2** *P* **4863** *L* **24** # 143

Ran, Adee Cisco

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

The text added by 802.3cd was "set as determined by the PMD control function on lane i (see 136.8.11.7.5)".

Implementation of maintenance request 1387 removed the cross-reference to 136.8.11.7.5.

However, while modifying this subclause, 802.3ck chose to keep this cross-reference and add a reference to a specific state and to the state diagram. This is a valuable change which pertains to clause 120 even without the additions of 802.3ck and should be applied in the revision and should be applied in the revision.

SuggestedRemedy

Change from "shall be set as determined by the PMD control function on lane i"
to "shall be set as determined by the PMD control function in the LINK_READY state on lane i (see 136.8.11.7.5 and Figure 136-7)".

Response *Response Status* **C**

ACCEPT.

Cl **135** *SC* **135.5.7.2** *P* **5258** *L* **49** # 144

Ran, Adee Cisco

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

The text added by 802.3cd was "set as determined by the PMD control function on lane i (see 136.8.11.7.5)".

Implementation of maintenance request 1387 removed the cross-reference to 136.8.11.7.5.

However, while modifying this subclause, 802.3ck chose to keep this cross-reference. As stated in another comment, in clause 120 802.3ck added more specific references to a specific state and to the state diagram. This is a valuable change which pertains to clause 135 even without the additions of 802.3ck and should be applied in the revision.

SuggestedRemedy

Change from "shall be set as determined by the PMD control function on lane i"
to "shall be set as determined by the PMD control function in the LINK_READY state on lane i (see 136.8.11.7.5 and Figure 136-7)".

Response *Response Status* **C**

ACCEPT.

Cl **135** *SC* **135.5.7.2** *P* **5258** *L* **16** # 145

Ran, Adee Cisco

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

The first paragraph of this subclause reads:
"A PMA shall provide 1/(1+D) mod 4 precoding capability on each output lane that is part of a 50GAUI-1
C2C or 100GAUI-2 C2C link, or connected to the PMD service interface of a 50GBASE-CR, 50GBASE-KR, 100GBASE-CR2, or 100GBASE-KR2 PMD. A PMA may optionally provide 1/(1+D) mod 4 decoding capability on each input lane that is part of a 50GAUI-1 C2C or 100GAUI-2 C2C
link, or connected to the PMD service interface of a 50GBASE-CR, 50GBASE-KR, 100GBASE-CR2, or
100GBASE-KR2 PMD"

This text is repetitive and includes a laundry list of PMDs which is repeated twice. It is difficult to follow.

Following the changes of maintenance request 1387, it is suggested to rephrase this paragraph for clarity, in a manner similar to the text in 120.5.7.2, but including the C2C interfaces and without the laundry list. This change can then be the template for an easier amendment of 120.5.7.2 in 802.3ck.

(This change is not within the scope of 802.3ck).

SuggestedRemedy

Change the first paragraph to read:
"A PMA connected to a 50GAUI-1 C2C or 100GAUI-2 C2C interface, or connected to the PMD service interface of a PMD that uses the PMD control function (136.8.11), shall provide 1/(1+D) mod 4 precoding capability on each output lane of that interface, and may optionally provide 1/(1+D) mod 4 decoding capability on each input lane of that interface."

Response *Response Status* **C**

REJECT.

The text is technically correct as written. There was no consensus that the proposed change was a significant improvement to the draft.

Cl **104** *SC* **104.5.7.4** *P* **4376** *L* **31** # 146

Stewart, Heath — Analog Devices

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

MDI return loss is incorrectly referenced to Clause 149. 802.3cg specified Clause 146. This appears to be a merge error.

SuggestedRemedy

Change "Clause 149" to "Clause 146" and grant editorial license to update the hyperlink accordingly.

Response *Response Status* **W**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **104** *SC* **104.7.2.5** *P* **4386** *L* **27** # 147

Stewart, Heath — Analog Devices

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

A text deletion was implemented correctly per 802.3cg. However the carraige return looks like it was not optimized.

SuggestedRemedy

Consider deleting the carraige return between "when shifting the contents of the register" and "and calculating the CRC field".

Response *Response Status* **C**

ACCEPT.

Cl **1** *SC* **1.4.450** *P* **210** *L* **20** # 148

Grow, Robert — RMG Consulting

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

We have long been sloppy about expansions for the acronym PHY. Because we have lived with using Physical Layer device instead of Physical Layer entity for a long time (i.e., since approval of IEEE Std 802.3u, published in the 1995 edition of Std 802.3)/ The risk of leaving inconsistencies and introducing errors leads to the suggestion that we should define these two uses of PHY as synonyms.

Because multiple clauses use the term Physical Layer entities with each PHY sublayer being an entity, perhaps Physical Layer device should be the primary definition and Physical Layer entity pointing to that.We can do that by inserting a definition for Physical Layer device. An attached comment file includes detailed changes for related changes.

SuggestedRemedy

1.4.449a Physical Layer device (PHY): Within IEEE 802.3, the portion of the Physical Layer between the Medium Dependent Interface (MDI) and the media independent interface specified to the Physical Layer data rate (e.g., MII, GMII, XGMII, etc.), consisting of the Physical Coding Sublayer (PCS), the Physical Medium Attachment (PMA), and, if present, the WAN Interface Sublayer (WIS) and Physical Medium Dependent (PMD) sublayers. The PHY contains the functions that transmit, receive, and manage the encoded signals that are impressed on and recovered from the physical medium.

1.4.450 Physical Layer entity: A sublayer of the Physical Layer.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

[Editor's note: Change subclause from 1.4.449a to 1.4.450 to agree with draft.]

Insert the following definition before 1.4.450 Physical Layer entity (PHY).
"Physical Layer device (PHY): Within IEEE 802.3, the portion of the Physical Layer between the Medium Dependent Interface (MDI) and the media independent interface specific to the data rate (e.g., MII, GMII, XGMII). The PHY contains the functions that transmit, receive, and manage the encoded signals that are impressed on and recovered from the physical medium."

Change the definition of Physical Layer entity as follows:
"Physical Layer entity: Syn: Physical Layer device"

Enforce consistent expansion of the term "PHY" in the draft, using <https://www.ieee802.org/3/dc/comments/grow_2_0821.xls> as guidance, and with editorial license.

Cl **1** *SC* **1.5** *P* **223** *L* **24** # 149

Grow, Robert RMG Consulting

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

Entity or entities are terms used mostly to describe PHY sublayers. So ambiguity can be avoided by changing PHY Physical Layer entity.

SuggestedRemedy

PHY Physical Layer device

Response *Response Status* **W**

ACCEPT.

Cl **24** *SC* **24.1.4** *P* **826** *L* **40** # 150

Grow, Robert RMG Consulting

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

Physical sublayer should change for accuracy and harmony with other clauses

SuggestedRemedy

Physical Layer device (PHY)

Response *Response Status* **W**

ACCEPT.

Cl **49** *SC* **49.1.1** *P* **2258** *L* **7** # 151

Grow, Robert RMG Consulting

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

The paragraph is awkward and should be rewritten because the PCS is part of each of the PHY types listed.

SuggestedRemedy

This PCS is used in the family of 10GBASE-R Physical Layer devices (PHYs): 10GBASE-SR, 10GBASE-LR, 10GBASE-ER, 10GBASE-LRM, and 10GBASE-KR. Alternatively, this PCS can connect to a WAN Interface Sublayer (WIS), which will produce the 10GBASE-W encoding (10GBASE-R encoded data stream encapsulated into frames compatible with SONET and SDH networks) for transport by the 10GBASE-W Physical Layer devices: 10GBASE-SW, 10GBASE-LW, and 10GBASE-EW. The term 10GBASE-R is used when referring generally to Physical Layers using the PCS defined here.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change the first paragraph of 49.1.1 to:
This clause specifies the Physical Coding Sublayer (PCS) that is used in the family of 10GBASE-R Physical Layer devices (PHYs): 10GBASE-SR, 10GBASE-LR, 10GBASE-ER, 10GBASE-LRM, and 10GBASE-KR. Alternatively, this PCS can connect to a WAN Interface Sublayer (WIS), which produces the 10GBASE-W encoding (10GBASE-R encoded data stream encapsulated into frames compatible with SONET and SDH networks) for transport by the 10GBASE-W Physical Layer devices: 10GBASE-SW, 10GBASE-LW, and 10GBASE-EW. The term 10GBASE-R is used when referring generally to Physical Layers using the PCS defined here.

Cl **119** *SC* **119.2.6.3** *P* **4837** *L* **27** # 152

Nicholl, Shawn Xilinx

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

Figure 119-13-PCS synchronization state diagram indicates when restart_lock is asserted. The body of subclause does not agree with the state diagram.

The current subclause text says:

Once in lock, a lane goes out of alignment marker lock only when restart_lock is signaled. This occurs when the PCS synchronization process determines that three uncorrectable codewords in a row are seen, or when the alignment marker lock process sees five alignment markers in a row that fail to match the expected pattern on a given lane.

Only one of those conditions currently impacts restart_lock.

SuggestedRemedy

Propose to encapsulate (within parenthesis) the single condition that affects restart_lock.

The proposed text is:

Once in lock, a lane goes out of alignment marker lock when restart_lock is signaled (this occurs when the PCS synchronization process determines that three uncorrectable codewords in a row are seen) or when the alignment marker lock process sees five alignment markers in a row that fail to match the expected pattern on a given lane.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

[Editor's note: Comment type changed from "TR" to "T" because it was a submitted with a ballot response of "APPROVE WITH COMMENTS ON SOME".]

Make the change proposed in the suggested remedy.

Cl **45** *SC* **45.2.1.212.1** *P* **1904** *L* **2** # 153

Wienckowski, Natalie General Motors

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

NAW_1a: Change 1000BASE-T1 PMA reset to match 802.3ch reset. The 1000BASE-T1 PHY is required to link within 100 ms from power apply, so the reset cannot take 500ms, as currently defined.

SuggestedRemedy

Change: The control and management interface shall be restored to operation within 0.5 s from the setting of bit 1.2304.15.
To: The control and management interface is restored to operation as defined in 97.4.2.1, starting when bit 1.2304.15 is set.

Response *Response Status* **C**

ACCEPT.

Cl **97** *SC* **97.4.2.1** *P* **3976** *L* **16** # 154

Wienckowski, Natalie General Motors

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

NAW_1b: Change 1000BASE-T1 PMA reset to match 802.3ch reset. The 1000BASE-T1 PHY is required to link within 100 ms from power apply, so the reset cannot take 500ms, as currently defined.

SuggestedRemedy

Add at the end of the subclause: The 1000BASE-T1 PMA takes no longer than 100 ms to enter the PCS_DATA state after exiting from reset or low power mode (see Figure 97-26).

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.5.3.3** *P* **2131** *L* **23** # 155

Wienckowski, Natalie General Motors

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

NAW_1c: Change 1000BASE-T1 PMA reset to match 802.3ch reset. The 1000BASE-T1 PHY is required to link within 100 ms from power apply, so the reset cannot take 500ms, as currently defined.

SuggestedRemedy

Delete PICS MM133 as the shall was removed related to the reset time by NAW_1a.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

[Editor's note: Subclause changed from 45.5.3.2 to 45.5.3.3.]

Implement suggested remedy.

Cl **97** *SC* **97.11.9** *P* **4020** *L* **6** # 156

Wienckowski, Natalie General Motors

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

NAW_1d: Change 1000BASE-T1 PMA reset to match 802.3ch reset. The 1000BASE-T1 PHY is required to link within 100 ms from power apply, so the reset cannot take 500ms, as currently defined.

SuggestedRemedy

Add in "Value/Comment" cell of PMF1: Described in 97.4.2.1.

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.2.3.76.1** *P* **2001** *L* **29** # 157

Wienckowski, Natalie General Motors

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

NAW_2a: Change 1000BASE-T1 PCS reset to match 802.3ch reset. The 1000BASE-T1 PHY is required to link within 100 ms from power apply, so the reset cannot take 500ms, as currently defined.

SuggestedRemedy

Change: The control and management interface shall be restored to operation within 0.5 s from the setting of bit 3.2304.15.
To: The control and management interface is restored to operation as defined in 97.3.2.1 starting when bit 3.2304.15 is set.

Response *Response Status* **C**

ACCEPT.

Cl **97** *SC* **97.3.2.1** *P* **3937** *L* **34** # 158

Wienckowski, Natalie General Motors

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

NAW_2b: Change 1000BASE-T1 PCS reset to match 802.3ch reset. The 1000BASE-T1 PHY is required to link within 100 ms from power apply, so the reset cannot take 500ms, as currently defined.

SuggestedRemedy

Add at the end of the subclause: The control and management interface shall be restored to operation within 10 ms from the setting of bit 3.2304.15.

Response *Response Status* **C**

ACCEPT.

Cl **45** *SC* **45.5.3.7** *P* **2148** *L* **48** # 159

Wienckowski, Natalie General Motors

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

NAW_2c: Change 1000BASE-T1 PCS reset to match 802.3ch reset. The 1000BASE-T1 PHY is required to link within 100 ms from power apply, so the reset cannot take 500ms, as currently defined.

SuggestedRemedy

Delete PICS RM110 as the shall was removed related to the reset time by NAW_2a.

Response *Response Status* **C**

ACCEPT.

Cl **97** *SC* **97.11.5** *P* **4017** *L* **26** # 160

Wienckowski, Natalie General Motors

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

NAW_2d: Change 1000BASE-T1 PCS reset to match 802.3ch reset. The 1000BASE-T1 PHY is required to link within 100 ms from power apply, so the reset cannot take 500ms, as currently defined.

SuggestedRemedy

For PCT23 in Subclause column, Change: 97.3.1 To: 97.3.2.1
and in Value/Comment Column, replace text with "Described in 97.3.2.1".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

[Editor's note: Changed clause from "00" to "97" and subclause from "0" to "97.11.5" to agree with cited page/line numbers.]

Implement the suggested remedy.

Cl **91** *SC* **91.5.2.6** *P* **3664** *L* **6** # 161

Wienckowski, Natalie General Motors

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

This issue was identified during P802.3ck D2.0 balloting and has been corrected as requested here. A large portion of the alignment marker payloads are repeated as described in the variable mapping in subclause 91.5.2.6, but not all; for example the BIP fields are not repeated
across the lanes. So the statement is not correct as currently written.

SuggestedRemedy

Change: The result of the alignment marker mapping function is a deterministic mapping between alignment marker payloads and FEC lanes. The alignment marker payloads corresponding to PCS lanes 0, 4, 8, 12, and 16 are transmitted on FEC lane 0, the alignment marker payloads corresponding to PCS lanes 0, 5, 9, 13, and 16 are transmitted on FEC lane 1, and so on (see Figure 91-4).
To: The result of the alignment marker mapping function is a deterministic mapping between alignment marker payloads and FEC lanes (see Figure 91-4).

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace the second paragraph on page 3666 (which begins "The result of the alignment marker mapping function is a deterministic mapping...") with the following:
"The result of the alignment marker mapping function is the deterministic mapping between alignment marker payloads and FEC lanes shown in Figure 91-4."

Cl **45** *SC* **45.5.3.7** *P* **2149** *L* **52** # 162

Wienckowski, Natalie General Motors

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

typo

SuggestedRemedy

Change: 8 octet
To: 8-octet

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

In the Feature column of item RM125 change: "8 octet" to: "8-octet".

Cl **FM** *SC* **FM** *P* **21** *L* **53** # 163

Wienckowski, Natalie General Motors

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

My name is missing from the list of participants

SuggestedRemedy

Add: Natalie Wienckowski after Joseph A. Wiencko

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Correct the omission per the suggested remedy. In addition, update the list of historical participants with a list consolidated from IEEE Std 802.3-2018, all approved amendments, and the Working Group ballot pool for this revision.

Cl **00** *SC* **0** *P* *L* # 164

Wienckowski, Natalie General Motors

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

Replace terms Master and Slave with more inclusive terms.

SuggestedRemedy

Replace with Director and Follower.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

On 3 December 2020, the IEEE SA Standard Board passed the following resolution. (See <https://standards.ieee.org/about/sasb/resolutions.html>.)
"IEEE standards (including recommended practices and guides) shall be written in such a way as to unambiguously communicate the technical necessities, preferences, and options of the standard to best enable market adoption, conformity assessment, interoperability, and other technical aspirations of the developing standards committee. IEEE standards should be written in such a way as to avoid non-inclusive and insensitive terminology (see IEEE Policy 9.27) and other deprecated terminology (see clause 10 of the IEEE SA Style Manual) except when required by safety, legal, regulatory, and other similar considerations. Terms such as master/slave, blacklist, and whitelist should be avoided."

In IEEE Std 802.3, 1000BASE-T, 10BASE-T1L, 100BASE-T1, 1000BASE-T1, and MultiGBASE-T PHYs use the terms "master" and "slave" to indicate whether the clock is derived from an external source or from the received signal. In these cases, the terms appear in the text, figures, state names, variable names, register/bit names, etc. A direct substitution of terms will create disconnects between the standard and the documentation for devices in the field (e.g., the register interface) and also risks the introduction of technical errors. Note that "master" and "slave" are also occasionally used to describe the relationship between an ONT and an ONU for EPON and between a CNT and a CNU for EPoC.

The approach that other IEEE standards are taking to address this issue have been considered. For example, IEEE P1588g proposes to define "optional alternative suitable and inclusive terminology" but not replace the original terms. (See <https://development.standards.ieee.org/myproject-web/public/view.html#pardetail/8858>.) It is understood that an annex to the IEEE 1588 standard has been proposed that defines the inclusive terminology. It is also understood that the inclusive terminology has been chosen to be "leader" and "follower".

The IEEE P802.1ASdr project proposes to align to the IEEE P1588g inclusive terminology. (See <https://development.standards.ieee.org/myproject-web/public/view.html#pardetail/9009>.)

Based on this, it seems reasonable to include an annex that defines optional alternative inclusive terminology and, for consistency, to use the terms "leader" and "follower" as the inclusive terminology.

Add an informative annex that defines "leader" and "follower" as alternative inclusive terminology based on the following text.

----- Start of annex text -----
Annex K (informative) Optional alternative terminology for "master" and "slave".

The IEEE 802.3 Ethernet standard uses the terms "master" and "slave" to assign roles, for example to define timing roles for certain PHYs. These terms, even while used strictly in a technical context, still have widely held negative social connotations. Because of this, some organizations with an interest in IEEE 802.3 Ethernet have policies or are considering policies, to discontinue the use of the master-slave terminology and replace it with other terms that have less negative social connotations.

If alternative terms for "master" and "slave" are used in implementations, then the following substitutions are recommended:

In place of "master", the term "leader" should be used. In place of the term "slave", the term "follower" should be used. For example, "MASTER PHY" would be replaced with "LEADER PHY". This includes the use of "master" or "slave" as part of a compound term. For example, "slave_transition_counter" would be replaced with "follower_transition_counter".

When translating into languages other than English, synonyms may be selected for "leader" and "follower" to avoid widely held negative social connotations.
----- End of annex text -----

Add the following note:
"NOTE - Annex K defines optional alternative terminology for "master" and "slave"."
at the following locations:
after definition 1.4.372
after definition 1.4.516
40.1.3 (after second paragraph)
55.1.3 (after second paragraph)
96.2 (at the end of the subclause)
97.1.2 (at the bottom of page 3923)
113.1.3 (after second paragraph)
126.1.3 (after second paragraph)
146.1.2 (after first paragraph on page 5790)
147.3.7.1 (after the first paragraph)
149.1.3 (after the third paragraph)
22.2.4 (after Table 22-6)
30.6.1.1.5 (at the end of the subclause)
45.2.1.204 (after Table 45-168)
45.2.7.10 (after Table 45-362)
78.5 (after the fifth paragraph)
98.2.1.2 (at the end of the subclause)
28D.4 (after the third paragraph)
Annex 40C (after the fourth paragraph)

Cl **129** *SC* **129.1.3** *P* **5170** *L* **28** # 165

McClellan, Brett Marvell

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

font size incorrect

SuggestedRemedy

fix font size for "10 GIGABIT"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Implement the suggested remedy with editorial license.

Cl **49** *SC* **49.3.6.6** *P* **2293** *L* **20** # 166

McClellan, Brett Marvell

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

missing reference

SuggestedRemedy

insert 'Figure 49-17'

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

[Editor's note: Page changed from 2993 to 2293.]

A reference to Figure 49-17 is indeed missing. However, Figure 49-17 does not mention "LPI operation".
The optional functionality is described as "to support EEE capability".
This also applies to Figure 49-16 mentioned in LP-05.
Change LP-05 Value/Comment from: "Support additions to Figure 49-16 for LPI operation" to:
"Support additions to Figure 49-16 for EEE capability".
Change LP-06 Value/Comment from: "Support additions to for LPI operation" to "Support additions to Figure 49-17 for EEE capability".

Cl **129** *SC* **129.7.6.5** *P* **5180** *L* **18** # 167

McClellan, Brett Marvell

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

missing reference

SuggestedRemedy

insert 'Figure 49-17'

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See the response to comment #11.

Cl **96** *SC* **96.1** *P* **3862** *L* **29** # 168

McClellan, Brett Marvell

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

Clause 96 is missing references to Clause 98 Auto-Negotiation even though Auto-Negotiation is defined for Clause 96 100BASE-T1

SuggestedRemedy

Insert an optional Auto-Negotiation block below PMA as shown in Figure 97-1 with a note around line 37 "Auto-Negotiation is optional"

96.1.1 page 3864 line 3 insert
"Auto-Negotiation (Clause 98) may optionally be used by 100BASE-T1 devices to detect the abilities
(modes of operation) supported by the device at the other end of a link segment, determine common
abilities, and configure for normal operation. Auto-Negotiation is performed upon link startup through the
use of half-duplex differential Manchester encoding. The implementation of the Auto-Negotiation function
is optional. If Auto-Negotiation is implemented, it shall meet the requirements of Clause 98."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Changes per comment. Add a new PICS entry to address the new requirement "If Auto-Negotiation is implemented, it shall meet the requirements of Clause 98.", with editorial license.

Cl **97** *SC* **97.11.8** *P* **4019** *L* **31** # 169

Slavick, Jeff Broadcom

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

Status field has two entries for OAM7 but nothing connecting them, should be a + or * to indiate OR or AND

SuggestedRemedy

Add a * after EEE:O

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

For OAM7, change "Status" to "EEE*OAM:M" and change the "Support" column to include only "Yes []" and "N/A []".

Make the same change to the "Status" for OAM10 in 149.11.4.2.8.

Cl **142** *SC* **142.3.5.1** *P* **5499** *L* **8** # 170

Slavick, Jeff Broadcom

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

What does Bit 0 mean, the 0th index of the 257 constant or the first bit of the sequence is a 0?

SuggestedRemedy

Follow the convention used in 142.1.3.1 that is referenced in the NOTE and change the text to read "Value: 0x1 - 0F - 10 - (01-EE-E8-02-D3-CA)3 - (EB-D2-57)4

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change to read "Value: A single 0 bit followed by 0x0F - 10 - (01-EE-E8-02-D3-CA)3 - (EB-D2-57)4"

Cl **126** *SC* **126.3.2.2.8** *P* **5016** *L* **39** # 171

Slavick, Jeff Broadcom

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

Both instances of "codes" are still plural in the first row of the table.

SuggestedRemedy

Change "codes" to "code"

Response *Response Status* **W**

ACCEPT.

Cl **104** *SC* **104.9.4.3** *P* **4396** *L* **23** # 172

Slavick, Jeff Broadcom

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

When multiple entries are present in the Status field a + or * should be present to indicate when they apply.

SuggestedRemedy

Add a + after the PDTA:M for PICS items PD20 and PD23

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Add "or" after the PDTA:M for PICS items PD20 and PD23

Cl **83A** *SC* **83A.7.7** *P* **6427** *L* **47** # 173

Slavick, Jeff Broadcom

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

Text of sub-clauses have updated to J.2 references but the PICS have not.

SuggestedRemedy

Update Annex J to J.2 in (includig hyperlink) ES1 in the following subclauses: 70.10.4.5, 71.10.4.6, 72.10.4.7, 84.11.4.5, 93.11.4.5, 94.6.4.6 130.10.4.6, 83A.7.7, 83B.4.6

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

In 83A.7.7, change the content of the "Feature" column for PICS item "ES1" to "Conforms to J.2.". Make similar changes in the following subclauses:
70.10.4.5, 71.10.4.6, 72.10.4.7, 84.11.4.5, 93.11.4.5, 94.6.4.6, 130.10.4.6, and 83B.4.6.

Cl **4** *SC* **4.2.8** *P* **261** *L* **30** # 174

Law, David — Hewlett Packard Enterprise

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

When the IEEE P802.3as project clarified the use of the terms frame and packet, eight of the nine instances of ifsStretchMode were changed to ipgStretchMode, however the instance in the BitTransmitter process was missed.

SuggestedRemedy

Suggest that

if ifsStretchMode then {Calculate the counter values}

should be changed to read

if ipgStretchMode then {Calculate the counter values}

Response *Response Status* **W**

ACCEPT.

Cl **4** *SC* **4.2.8** *P* **262** *L* **41** # 175

Law, David — Hewlett Packard Enterprise

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

The interPacketSignal procedure is used in burst mode to fill the gap between frames with extension bits (see subclause 3.2.10). When called the procedure first sets interPacketCount to zero and sets interPacketTotal to interPacketSpacing. Then for each transition through the while-do loop, it transmits an extension bit, increments interPacketCount, and checks for a collision. The while-do loop executes while interPacketCount < interPacketTotal, so ends once interPacketCount = interPacketTotal.

The constant interPacketSpacing, however, is not defined anywhere.

On review of IEEE P802.3z, which first added this procedure, it was called InterFrameSignal, the while-do loop executed while interFrameCount < interFrameTotal, and interFrameTotal was set to interFrameSize. Subsequently, when the IEEE P802.3as project clarified the use of the terms frame and packet, comment #7 received on draft D3.0 <https://www.ieee802.org/3/as/public/0604/802.3as_d3_0_comments_resolutions.pdf#page=17> was accepted to change the name for the constant interFrameSpacing. While the proposed remedy proposed changing interFrameSpacing to interPacketSpacing, the comment response was to change interFrameSpacing to interPacketGap.

While the comment response seems to have been implemented everywhere else, for some reason the instance of interFrameSpacing in the InterFrameSignal procedure (that was also renamed by the project, to interPacketSignal) seems to have been changed to the proposed remedy. I suspect that this may be due to a substitution of 'frame' for 'packet' in this instance rather than the substitution of interFrameSpacing with interPacketGap as required.

SuggestedRemedy

In the interPacketSignal procedure change:

interPacketTotal := interPacketSpacing;

to read:

interPacketTotal := interPacketGap;

Response *Response Status* **W**

ACCEPT.

Cl **5** *SC* **5.2.4.2** *P* **288** *L* **36** # 176

Law, David Hewlett Packard Enterprise

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

There is no procedure called IncrementLargeCounter, instead the counter increment procedure is called IncLargeCounter, see subclause 5.2.4.4 'Common procedures' (page 291, line 38).

SuggestedRemedy

Suggest that:

IncrementLargeCounter(excessiveDeferral)

should be changed to read:

IncLargeCounter(excessiveDeferral)

Response *Response Status* **W**

ACCEPT.

Cl **5** *SC* **5.2.4.3** *P* **290** *L* **49** # 177

Law, David Hewlett Packard Enterprise

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

Subclause 5.2.4.3 'Receive variables and procedures' defines the 'inRangeLengthErrors' counter (page 289, line 54) however the LayerMgmtReceiveCounters procedure increments inRangeLengthError' (no 's'). There is no other reference to inRangeLengthError in IEEE Std 802.3.

SuggestedRemedy

Suggest that:

IncLargeCounter(inRangeLengthError);

should be changed to read:

IncLargeCounter(inRangeLengthErrors);

Response *Response Status* **W**

ACCEPT.

Cl **6** *SC* **6.1** *P* **292** *L* **6** # 178

Law, David Hewlett Packard Enterprise

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

The text '... sublayer for 1 Mb/s and 10 Mb/s implementations ...' has a line break between the '10 Mb/' and the 's'.

SuggestedRemedy

Suggest that the line break between the '10 Mb/' and the 's'.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Modify the formatting so that "10 Mb/s" does not break across the line.

Cl **30** *SC* **30.1.4** *P* **989** *L* **53** # 179

Law, David Hewlett Packard Enterprise

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

The penultimate paragraph of subclause 30.1.4 'Management model' reads 'The above items are defined in 30.3 through 30.3.7 of this clause in terms of the template requirements of ISO/IEC 10165-4:1991.' however because of the addition of further management object classes over the years this should read 30.3 through 30.16.1.

SuggestedRemedy

Change 'The above items are defined in 30.3 through 30.3.7 of this clause in terms of the template requirements of ISO/IEC 10165-4:1991.' to read 'The above items are defined in 30.3 through 30.16.1 of this clause in terms of the template requirements of ISO/IEC 10165-4:1991.'.

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.3.1.1.34** *P* **1039** *L* **38** # 180

Law, David — Hewlett Packard Enterprise

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

When the IEEE P802.3as project clarified the use of the terms frame and packet and changed ifsStretchMode to ipgStretchMode in subclause 4.2.7.2, it didn't update the reference to ifsStretchMode in subclause 30.3.1.1.34.

SuggestedRemedy

Suggest that

This attribute maps to the variable ifsStretchMode (see 4.2.7.2).;

should be changed to read

This attribute maps to the variable ipgStretchMode (see 4.2.7.2).;

Response *Response Status* **W**

ACCEPT.

Cl **30** *SC* **30.5.1.1.4** *P* **1093** *L* **33** # 181

Law, David — Hewlett Packard Enterprise

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

I think the reference to Figure 46-11 in the currently 40Gb/s and 100Gb/s text should be to Figure 81-11 since Clause 81 is the 'Link Fault Signaling state diagram' and since subclause 81.3.4.1, which is also referenced, states 'The RS shall implement the link fault signaling state diagram (see Figure 81-9).'. I also suggest that the reference to link_fault variable should be to 81.3.4.1 'Variables and counters'.

SuggestedRemedy

Suggest that 'For 40 Gb/s, 50 Gb/s, 100 Gb/s, 200 Gb/s, and 400 Gb/s, the enumerations map to value of the link_fault variable (see 81.3.4) within the Link Fault Signaling state diagram (see 81.3.4.1 and Figure 46-11) as ...' should be changed to read 'For 40 Gb/s, 50 Gb/s, 100 Gb/s, 200 Gb/s, and 400 Gb/s, the enumerations map to value of the link_fault variable (see 81.3.4.1) within the Link Fault Signaling state diagram (see Figure 46-11) as ...'.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Updates to proposed text shown in >><<

Change 'For 40 Gb/s, 50 Gb/s, 100 Gb/s, 200 Gb/s, and 400 Gb/s, the enumerations map to value of the link_fault variable (see 81.3.4) within the Link Fault Signaling state diagram (see 81.3.4.1 and Figure 46-11) as ...' should be changed to read 'For 40 Gb/s, 50 Gb/s, 100 Gb/s, 200 Gb/s, and 400 Gb/s, the enumerations map to value of the link_fault variable (see 81.3.4.1) within the Link Fault Signaling state diagram (see Figure >>81<<-11) as ...'.

Cl **33** *SC* **33.7.1** *P* **1376** *L* **8** # 182

Law, David — Hewlett Packard Enterprise

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

I believe that SELV has always been an objective of IEEE 802.3 PoE projects. Item (b) of subclause 33.1.1 'Objectives' of both IEEE Std 802.3af-2003 and IEEE Std 802.3at-2009 read:

b) Safety - A PSE designed to the standard will not introduce non-SELV (Safety Extra Low Voltage) power into the wiring plant.

While IEEE Std 802.3 no longer includes such 'objectives' text in the body of the standard, the

IEEE P802.3bt project objectives <https://ieee802.org/3/bt/P802d3bt_objectives.pdf> included:

IEEE Std 802.3 will comply to the limited power source and SELV requirements as defined in ISO/IEC 60950

With the replacement of IEC 60950 with the IEC 62368 series of standards, the IEEE Std 802.3cr-2021 amendment has changed the text:

All equipment subject to this clause shall conform to IEC 60950-1' in subclause 33.7.1 'General safety' (Power over Ethernet over 2 Pairs) to read:

All equipment subject to this clause shall conform to the general safety requirements as specified in J.2.

Similar changes were made to subclause 104.8.1 'General safety' (Power over Data Lines (PoDL) of Single-Pair Ethernet) and subclause 145.6.1 'General safety' (Power over Ethernet). The referenced subclause J.2 'General safety' reads:

Equipment shall comply with all applicable local, state, national and applicationspecific standards, such as the applicable sections of IEC 62368-1:2018. In addition, the IEEE Std 802.3cr-2021 amendment changes the text in subclause 33.7.1 'General safety':

The PSE shall be classified as a Limited Power Source in accordance with IEC 60950-1.

to read:

The PSE shall be classified as a Limited Power Source in accordance with Annex Q of IEC 62368-1:2018, as applicable.

Again, similar changes are found in subclauses 104.8.1 and 145.6.1.

The above seems to confirm my understanding, that it has always been an objective of PoE projects to meet SELV requirements, and to not introduce non-SELV power on to the wiring plant. While IEC 60950-1 defined SELV, it did include a note to the SELV definition

that said, 'This definition of a SELV circuit differs from the term "SELV system" as used in IEC 61140'. This is aligned with my understanding that equipment standards, such as IEC 60950, and more recently IEC 62368, are not entirely aligned with the electrical installation standards, such as the IEC 60364 Low voltage electrical installations series, which is based on IEC 61140 Protection against electric shock - Common aspects for installation Proposed IEEE P802.3 (IEEE 802.3dc) comment and equipment. It should be noted that IEC 60364 includes 'fixed wiring for information and communications technology' within its scope.

IEEE 802.3 currently normatively references Annex Q of IEC 62368 62368-1:2018, but based on the comparison in the attached <ES1_LPS_SELV_1_0821.pdf>, I don't think this is sufficient to prevent the introduction of non-SELV power into the wiring plant as defined by the applicable parts of the IEC 60364 series. While Annex J.2 says that all equipment shall comply with all applicable local, state, national and application-specific standards, and they apply regardless of what IEEE 802.3 says, it has been our practice to normatively reference certain standards to meet items specifically called out in objectives. As a result, if it remains as I believe it should be, the intent to not introduce non-SELV power into the wiring plant, IEEE Std 802.3 should also reference the appropriate SELV standard for wiring such as IEC 60364 or IEC 61140.

SuggestedRemedy

Suggest the text 'The PSE shall be classified as a Limited Power Source in accordance with Annex Q of IEC 62368-1:2018, as applicable.' should be changed to read 'The PSE shall be classified as a Limited Power Source in accordance with Annex Q of IEC 62368-1:2018, as applicable, and meet the SELV requirements in IEC 60364-7-716:20XX'.

Make the same change to subclauses 104.8.1 and 145.6.1.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Implement the suggested remedy with editorial license.

Add an entry for IEC 60364-7-716:20XX in clause 1.3. "IEC 60364-7-716:20XX, Low-Voltage electrical installations - Part 7-716: Requirements for special installations or locations - DC power distribution over Information Technology Cable Infrastructure"

In 33.8.3.10, item PSEES1, change "Limited Power Source in accordance with Annex Q of IEC 62368-1:2018, as applicable" to "Limited Power Source in accordance with Annex Q of IEC 62368-1:2018, as applicable and meet the SELV requirements in IEC 60364-7-716:20XX"

In addition, update the PICS related to 104.8.1 and 145.6.1 accordingly.

Cl **33** *SC* **33.8.3.9** *P* **1393** *L* **19** # 183

Law, David Hewlett Packard Enterprise

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

There are duplicate PICS entries for subclause 33.7.1 'General safety'. The first is in subclause 33.8.3.9 'Environmental specifications applicable to PSEs and PDs' item 'ES2' with a feature of 'PSE classified as a limited power source' and a value of 'In accordance with Annex Q of IEC 62368-1:2018, as applicable'. The second is in subclause 33.8.3.10 'Environmental specifications applicable to the PSE' item 'PSEES1' with a feature of 'Safety' and a value of 'Limited Power Source in accordance with Annex Q of IEC 62368-1:2018, as applicable'. Since subclause 33.7.1 'General safety' says that 'The PSE shall be classified as a Limited Power Source in accordance with Annex Q of IEC 62368-1:2018, as applicable.' this seems to be a PSE only require, and therefore should be in subclause 33.8.3.10 and not subclause 33.8.3.9.

SuggestedRemedy

Suggest that entry 'ES2' in subclause 33.8.3.9 should be deleted.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Delete item ES2 in 33.3.8.9. Renumber remaining PICS entries.

Cl **45** *SC* **45.5.3.3** *P* **2130** *L* **45** # 184

Law, David Hewlett Packard Enterprise

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

A mandatory PICS item that is predicated by another item should only have the options 'Yes [ ]' and 'N/A [ ]' in the support column.

SuggestedRemedy

Delete the No '[ ]'

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

In item MM125, delete "No [ ]" from the Support column.

Cl **74** *SC* **74.4.1** *P* **3108** *L* **26** # 185

Law, David — Hewlett Packard Enterprise

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

In Figure 74-2 'Functional block diagram for 10GBASE-R PHYs' the primitives on the link from the 'LPI' box to the 'FEC Decoder &
Block Synchronization' box are labelled 'FEC_RXMODE.request', 'FEC_TXMODE.request' and 'FEC_LPIACTIVE.request', yet these do not match the definition in subclause 74.5.1 '10GBASE-R service primitives' which are 'FEC_TX_MODE.request', 'FEC_RX_MODE.request' and 'FEC_LPI_ACTIVE.request' (extra underscore in name).

SuggestedRemedy

Suggest that 'FEC_RXMODE.request', 'FEC_TXMODE.request' and 'FEC_LPIACTIVE.request' be changed to read 'FEC_TX_MODE.request', 'FEC_RX_MODE.request' and 'FEC_LPI_ACTIVE.request'.

Response *Response Status* **C**

ACCEPT.

Cl **78** *SC* **78.4.2.5** *P* **3309** *L* **36** # 186

Law, David — Hewlett Packard Enterprise

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

In figure 78-6 'EEE DLL Transmitter state diagram' on the transition from the TX UPDATE to the MIRROR UPDATE state, expand the text box so that LocResolvedTxSystemValue isn't hyphenated.

SuggestedRemedy

See comment.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Expand the text box near the transition from TX UPDATE to MIRROR UPDATE, so that LocResolvedTxSystemValue isn't hyphenated, and align the text to the left.

Cl **81** *SC* **81.1.7.1.2** *P* **3387** *L* **33** # 187

Law, David — Hewlett Packard Enterprise

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

Subclause 6.3.1.1.2 'Semantics of the service primitive' says that 'The OUTPUT_UNIT parameter can take on one of three values: ONE, ZERO, or DATA_COMPLETE ...'.

SuggestedRemedy

Suggest that 'The OUTPUT_UNIT parameter can take one of three values: one, zero, or DATA_COMPLETE.' be changed to read 'The OUTPUT_UNIT parameter can take one of three values: ONE, ZERO, or DATA_COMPLETE.'.

Response *Response Status* **C**

ACCEPT.

Cl **90** *SC* **90.5.2** *P* **3652** *L* **11** # 188

Law, David — Hewlett Packard Enterprise

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

Subclause 90.5.2 ' TS_SFD_Detect_RX function' includes the text '... occurrence of the Start Frame (SFD, see 3.1.1 and 3.2.2) in ...', however SFD is Start Frame Delimiter (see referenced subclause 3.1.1). See also similar text in subclause 90.5.1.

SuggestedRemedy

Suggest that '... occurrence of the Start Frame (SFD, see 3.1.1 and 3.2.2) in ...' be changed to read '... occurrence of the Start Frame Delimiter (SFD, see 3.1.1 and 3.2.2) in ...'.

Response *Response Status* **C**

ACCEPT.

Cl **91** *SC* **91.5.4.3** *P* **3680** *L* **40** # 189

Law, David Hewlett Packard Enterprise

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

In the 2_GOOD state of figure 91-8 'FEC synchronization state diagram' the variable FEC_lane_mapping<x> is assigned the value fec_lane, however, FEC_lane_mapping<x> is missing from the subclause 91.5.4.2.1 Variables list.

SuggestedRemedy

Add the following to subclause 91.5.4.2.1 'Variables':

FEC_lane_mapping<x>
See 91.6.11.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add the following to subclause 91.5.4.2.1 'Variables':

FEC_lane_mapping<x>
See 91.6.18.

Cl **99** *SC* **99.4.7.3** *P* **4078** *L* **2** # 190

Law, David Hewlett Packard Enterprise

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

The description of the first two Boolean variable start 'A Boolean variable ...', all others start 'Boolean variable ...'.

SuggestedRemedy

Suggest 'A' be deleted from first two.

Response *Response Status* **C**

ACCEPT.

Cl **99** *SC* **99.4.7.3** *P* **4078** *L* **46** # 191

Law, David Hewlett Packard Enterprise

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

Typo

SuggestedRemedy

Suggest that 'preemptableFragSize:' should read 'preemptableFragSize' (remove the ':').

Response *Response Status* **C**

ACCEPT.

Cl **99** *SC* **99.4.7.7** *P* **4083** *L* **10** # 192

Law, David Hewlett Packard Enterprise

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

In the Figure 99-5 'Transmit Processing state diagram' IDLE_TX_PROC state, eTXCplt is assigned FALSE. I believe that the variable in questions is defined as eTxCplt (lower case 'x') in subclause 99.4.7.3 'Variables'.

SuggestedRemedy

Suggest that 'eTXCplt' in the IDLE_TX_PROC state of Figure 99-5 should be changed to 'eTxCplt'.

Response *Response Status* **C**

ACCEPT.

Cl **99** *SC* **99.4.7.7** *P* **4083** *L* **13** # 193

Law, David Hewlett Packard Enterprise

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

The Figure 99-5 'Transmit Processing state diagram' uses a mixture of eTX and eTx in state transitions. I believe that the variable in questions is defined as eTx in subclause 99.4.7.3 'Variables'.

SuggestedRemedy

Suggest that instances of 'eTX' in Figure 99-5 state transitions should be changed to 'eTx'.

Response *Response Status* **C**

ACCEPT.

Cl **136** *SC* **136.8.5** *P* **5283** *L* **30** # 194

Law, David — Hewlett Packard Enterprise

Comment Type **T** *Comment Status* **R** *PMD control*

Subclause 136.8.5 says that 'If training is disabled by the management variable mr_training_enable (see 136.7), PMD_signal_detect_i shall be set to one for all lanes.' and that 'The signal_detect variables are set independently on each lane by the PMD control state diagram (Figure 136-7)'. Figure 136-7 'PMD control state diagram' however assigns signal_detect <= FALSE in the INITIALIZE state when either reset or mr_restart_training are true. Figure 136-7 only assigns signal_detect <= TRUE in the SEND_DATA state based on !mr_training_enable once both reset and mr_restart_training are false.

While this seems to create a conflict between the 'shall' in subclause 136.8.5 and Figure 136-7, subclause 136.8.11.7.5 'State diagrams' says that 'The notation used in the state diagrams follows the conventions of 21.5.' and subclause 21.5 'State diagrams' says that 'State diagrams take precedence over text.'. In addition, I imagine that the text wasn't trying to provide a comprehensive description of the operation of PMD_signal_detect_i including reset conditions but instead was to explain that during operation PMD_signal_detect_i is set to one for all lanes if mr_training_enable is true.

SuggestedRemedy

Since the state diagram is normative, suggest that 'If training is disabled by the management variable mr_training_enable (see 136.7), PMD_signal_detect_i shall be set to one for all lanes.' be changed to descriptive text that reads 'If training is disabled by the management variable mr_training_enable (see 136.7), PMD_signal_detect_i is set to one for all lanes.'.

Response *Response Status* **C**

REJECT.

The definition of the PMD lane-by-lane signal detect function uses the variables PMD_signal_detect_i, which are separate from the signal_detect state diagram variables.

When mr_training_enable is true, PMD_signal_detect_i are assigned based on the signal_detect variable in the state diagram on each lane. But when mr_training_enable is false, the text requires that this assignment does not occur, and instead "PMD_signal_detect_i shall be set to one for all lanes".

This means that when training is disabled, signal detect indications (lane-by-lane and global) will always be one, even during assertion of either mr_restart_training or reset. The assignments of the signal_detect state machine variables have no effect in that case.

While this situation could be explained more clearly, there is no contradication between the text and the state diagram.

Note that a similar situation exists in the signal detect functions of 72.6.4 and subsequent clauses that use the PMD control function of clause 72.

Cl **136** *SC* **136.8.11.7.1** *P* **5293** *L* **51** # 195

Law, David — Hewlett Packard Enterprise

Comment Type **E** *Comment Status* **D** *PMD control*

The values 'coefficient at limit' and 'equalization limit' are listed twice in the description of the coef_sts variable.

SuggestedRemedy

Suggest that '... coefficient at limit, coefficient not supported, equalization limit, coefficient at limit and equalization limit.' be changed to read ' coefficient at limit, coefficient not supported and equalization limit.'.

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **80** *SC* **80.1.5** *P* **3364** *L* **50** # 196

D'Ambrosia, John — Futurewei, US Subsidiary of Huawei

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

100GBASE-ZR (specified by IEEE 802.3ct) needs to be added

SuggestedRemedy

Add IEEE 802.3ct-2021

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

See response to comment #110.

Cl **147** *SC* **147.5.4.4.1** *P* **5889** *L* **19** # 197

Baggett, Tim — Microchip

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

Lines 19, 29 - "f" in the frequency range appears to be a different font size (9 point whereas surrounding text is 10 point)

SuggestedRemedy

Change font size of "f" in lines 19 & 29 from 9 point to 10 point.

Response *Response Status* **C**

ACCEPT.

Cl **147** *SC* **147.7.1** *P* **5891** *L* **42** # 198

Baggett, Tim Microchip

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

"f" in the frequency range appears to be a different font size (9 point whereas surrounding text is 10 point)

SuggestedRemedy

Change font size of "f" from 9 point to 10 point.
Also on Page 5892 Lines 3, 17, 34, and 46; page 5896 line 21.

Response *Response Status* **C**

ACCEPT.

Cl **147** *SC* **147.9.2** *P* **5896** *L* **28** # 199

Baggett, Tim Microchip

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

The resistance parameter, R, in row 1 of Table 147-4 should have the unit of measure of "k ohm", not "kW".
There should already be a maintenance request for this issue.

SuggestedRemedy

Change: "kW"
To: "k ohm" where ohm is replaced with the omega symbol

Response *Response Status* **C**

ACCEPT.

Cl **147** *SC* **147.9.3** *P* **5896** *L* **41** # 200

Baggett, Tim Microchip

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

Mixed "direct current" abbreviation. Should it be "dc" as I've seen elsewhere in the specification (Clause 104) or "DC"?

SuggestedRemedy

Change "dc" to "DC" or "DC" to "dc" to be consistent (at least locally). Perhaps do a search through the document.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change "DC" to "dc" in the first sentence of 147.9.3.

Cl **30** *SC* **30.16.1.1.6** *P* **1195** *L* **37** # 201

Baggett, Tim Microchip

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

The reference to Clause 148.4.4.1 for the specification of PLCA Maximum Burst Count appears wrong. There is very little in CL148.4.4.1 about burst mode. The only thing I see is a very weak "the node now gets a TO having at least one packet to be transmitted." on P5913 L36.

Is this enough to warrant a reference to the clause?

The reference to CL 148.4.4.2 is good, as the max burst count (max_bc) variable is defined in this clause (P5915 L9).

SuggestedRemedy

Change: "as specified in 148.4.4.1 and 148.4.4.2."
To: "as specified in 148.4.4.2."

Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.16.1.1.7** *P* **1195** *L* **47** # 202

Baggett, Tim Microchip

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

The reference to Clause 148.4.4.1 for the specification of PLCA Maximum Burst Count appears wrong. There is very little in CL148.4.4.1 about burst mode. The only thing I see is a very weak "the node now gets a TO having at least one packet to be transmitted." on P5913 L36.

Is this enough to warrant a reference to the clause?

The reference to CL 148.4.4.2 is also incorrect, as the max burst timer (burst timer) is defined in CL 148.4.4.4 (P5915 L50).

SuggestedRemedy

Change: "See definition in 148.4.4.1 and 148.4.4.2."
To: "See definition in 148.4.4.4."

Response *Response Status* **C**

ACCEPT.

Cl **98** *SC* **98.5.6.2** *P* **4058** *L* **18** # 203

Baggett, Tim Microchip

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

The low_speed_autoneg function is defined as returning false if [...] otherwise this function returns false.
I believe the function should be defined to return *true* if at least the last 12 receive DME pulses are within the allowed range for the low-speed AN.

SuggestedRemedy

Change: "This function returns false if at least the last 12 received DME pulses are within the allowed range..."
To: "This function returns true if at least the last 12 received DME pulses are within the allowed range..."

Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **0** *P* **0** *L* **0** # 204

Thompson, Geoff GraCaSI S.A./Independent

Comment Type **ER** *Comment Status* **R** *bucket*

Balloting instructions are incomplete. There is no direction as to which version to use for page references, i.e. ALL SECTIONS version or the page numbering for each of the 9 sections. My comments will refer to the ALL SECTIONS pagination numbering.

SuggestedRemedy

Specify one or the other in the balloting instructions for each recirculation and subsequent ballot. My preference is for the ALL SECTIONS version.

Response *Response Status* **W**

REJECT.

This comment pertains to the ballot announcement and not the draft.

The ballot announcement included the following statement which unambiguously points to the "ALL_SECTIONS" draft.
"The IEEE P802.3 (IEEE 802.3dc) Maintenance #16: Standard for Ethernet (Revision) draft D2.0 may be downloaded from:

URL:
<https://ieee802.org/3/private/maint/dcballot/D2p0/P8023_D2p0_ALL_SECTIONs.pdf>"

No reference to the files for individual sections is made in the ballot announcement.

No change to the draft.

Cl **21** *SC* **21.5.4** *P* **686** *L* **49** # 205

Thompson, Geoff GraCaSI S.A./Independent

Comment Type **ER** *Comment Status* **A** *equations, bucket*

Symbols in Table 21-1 seem to be incorrect. They certainly are not customary or consistent with past use.

SuggestedRemedy

Revise to be consistent with symbology used in previous revisions.

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Resolve with comment #103.

Cl **FM** *SC* **FM** *P* **2** *L* **13** # 206

Thompson, Geoff GraCaSI S.A./Independent

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

In the Keywords it seems that terms and their abbreviations are dealt with completely independently rather than having an association with each other. That is, each item is sorted separately and alphabetically instead of an abbreviation and its term being grouped together for sorting. For example what is in the draft as "AN; attachment unit interface; AUI; Auto-Negotiation;" is quite confusing whereas "AN; Auto-Negotiation; AUI; attachment unit interface;" would seem to be more helpful to human readers.

SuggestedRemedy

Group abbreviations with their term and preserve the connection through sorting. Perhaps a different separator within a group (em dash?) would help.

Response *Response Status* **C**

REJECT.

Alphabetical order has been used for the keywords in IEEE Std 802.3-2018 and its published amendments. The order seems to be unimportant for the primary purpose of the keywords which is it to enable the standard to be referenced in bibliographic environments.

Cl **FM** *SC* **FM** *P* **5** *L* **44** # 207

Thompson, Geoff GraCaSI S.A./Independent

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

The target for the reference, IEEE SA Website and the directions for using it are laughable in terms of the service that the text alleges to support.

SuggestedRemedy

Revise what you get when you enter "802.3" so that the most recent comes up first and each entry is properly labeled as ACTIVE, WITHDRAWN, or SUPERCEDED. The Network Systems Tutorial which was never a standard and is no longer technically relevant nor can the SA cough up a copy should be removed from the list.

Response *Response Status* **C**

REJECT.

[Editor's note: Clause and subclause changed from "FM Errata" to "FM" to facilitate sorting.]

The comment pertains to the web page <https://standards.ieee.org/standard/index.html> that is referred to in the draft front-matter and not to the draft itself. It is suggested that the commenter contact the IEEE Standards Staff Liaison to discuss the observed behavior.

No change to the draft.

Cl **FM** *SC* **FM** *P* **7** *L* **13** # 208

Thompson, Geoff GraCaSI S.A./Independent

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

In spite of the fact that he deserves it and in spite of the tremendous amount of work of work that he has put in on the project, I don't think Pete Anslow is allowed to be a member of this list or a voting member of the 802.3 Working Group since, as I understand it, he is now a paid employee/contractor of the IEEE SA which states earlier in the Front Matter that its standards are developed by volunteers.

SuggestedRemedy

The conventional thing to do would be to remove Pete's name from the list. I would rather change the Front Matter statement and the rules.

Response *Response Status* **C**

REJECT.

The statement in the front matter is correct that volunteers participate in standards development without compensation from IEEE. This applies equally to IEEE employees and contractors, as to everybody else. Being an IEEE employee or contractor, however, does not prohibit an individual from participating as a volunteer. They however can only participate as volunteers in their own time, and not while fulfilling their employment or contractual obligations.

Cl **FM** *SC* **FM** *P* **23** *L* **16** # 209

Thompson, Geoff GraCaSI S.A./Independent

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

The referenced text still doesn't even hint at the change that made 802.3 into a real Ethernet standard, i.e. pulling EtherTypes into the scope of the standard. I feel we should put in a little something.
(See my e-mail of July 6, 2021 to Roger Marks (attached) for a more complete explanation.)

SuggestedRemedy

Change the text of the last two sentences of the paragraph from:
"The title was changed to Standard for Ethernet with the 2012 Revision. Since 1985, new media options, new speeds of operation, and new capabilities have been added to IEEE Std 802.3. A full duplex MAC protocol was added in 1997.""

To:
"Since 1985, new media options, new speeds of operation, and new capabilities have been added to IEEE Std 802.3. The capabilities specified for the upper layer interface were broadened by including EtherType into the scope and a full duplex MAC protocol was added in 1997. The title was changed to Standard for Ethernet with the 2012 Revision."

Response *Response Status* **W**

ACCEPT IN PRINCIPLE.

Change the text of the last two sentences of the second paragraph from:
"The title was changed to Standard for Ethernet with the 2012 Revision. Since 1985, new media options, new speeds of operation, and new capabilities have been added to IEEE Std 802.3. A full duplex MAC protocol was added in 1997."
to:
"Since 1985, new media options, new speeds of operation, and new capabilities have been added to IEEE Std 802.3. A full duplex MAC protocol and the ability to use an Ethertype to specify the MAC client protocol were added in 1997. The title was changed to Standard for Ethernet with the 2012 Revision."

Cl **00** *SC* **0** *P* **0** *L* **0** # 210

Thompson, Geoff — GraCaSI S.A./Independent

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

In many places in the standard the text still implies that the next layer up is only LLC. This is not the case for several reasons including bridging and upper layer clients producing or receiving frames identified by EtherType. While this has been fixed many places in the standard, it needs to be gone through and fixed in the remaining instances.

SuggestedRemedy

I did a search on the term "LLC" to produce a page list then went through and evaluated each (until I pooped out at page 3547). I have produced editing recommendations for each instance. These are in a separate file named LLC occurances.xls. Please incorporate the recommended changes.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

[Editor's note: Clause changed from "All" to "00" and subclause changed from "All" to "0" to facilitate sorting. Also not that "LLC occurances.xls" was posted as "thompson_1_0821.xls".]

Correct all instances where "Logical Link Control" or "LLC" is referenced but the more generic "MAC client" should be referenced instead. Use <http://ieee802.org/3/dc/comments/thompson_1_0821.xls> as guidance with editorial license.

Cl **130** *SC* **130.7.1.8** *P* **5192** *L* **5** # 211

Dawe, Piers — Nvidia

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

5GBASE-KR transmit jitter is defined with a single-pole high-pass filter with a 3 dB point at 4 MHz. This is the same as 10GBASE-KR and other 10GBASE-R PMDs, but the signalling rate is half. For info: the jitter limits in UI are similar but not identical.

SuggestedRemedy

Is keeping the jitter corner at 4 MHz intentional or should it be 2 MHz?

Response *Response Status* **C**

REJECT.

[Editor's note: Page changed from 460 to 5192]

The comment does not clearly state a problem with the jitter measurement bandwidth. It is not necessary that the bandwidth for 5GBASE-KR be different than for 10GBASE-R PMDs.

Justification to make any change in the draft has not been provided.

Cl **1** *SC* **1.3** *P* **65** *L* **17** # 212

Dawe, Piers — Nvidia

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

Some references will need updating before this project is complete.

SuggestedRemedy

Response *Response Status* **C**

REJECT.

The comment does not indicate what references need to be updated, how they should be updated, or the reason to update them.

No change to the draft.

Cl **94** *SC* **94** *P* **6538** *L* **43** # 213

Dawe, Piers Nvidia

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

As we do not believe that 100GBASE-KP4 will be made in future, we should add a NOTE similar to the ones for 100BASE-T4, 100BASE-T2 and 33.5, 2-pair PoE management: "NOTE--This PHY is not recommended for new installations."
As to whether Clause 94 should continue to be maintained: 120.5.11.2.1, PRBS13Q test pattern for 200GBASE-R and 400GBASE-R PMA, contains "produces the same result as the implementation shown in Figure 94-6, which implements the generator polynomial shown in Equation (94-3)";
149.5.1 Test modes for 2.5GBASE-T1, 5GBASE-T1 and 10GBASE-T1 PMAs, and 149.5.2.3.1, refer to patterns JP03A (94.2.9.1) and JP03B (94.2.9.2)";
149.5.2.3.2 refers to 94.3.12.6.1 and 94.3.12.6.2.

SuggestedRemedy

In Table 93B-1, change "... channel as defined in 93.9 and 94.4" to "... channel as defined in 93.9 or 94.4".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

[Editor's note: Page changed from 516 to 6538 and line changed from 3 to 43]

The suggested remedy seems unrelated to the comment.

It is not clear whether 100GBASE-KP4 devices have been made or will be made in the future. As this is a backplane PHY, instances would likely be embedded in systems where its use may not be obvious. It does not seem appropriate to discourage the use of this PHY at this time.

The suggested remedy notes a cross-reference from Table 93B-1 to Clause 94, but Annex 93B is not mentioned in Clause 94 at all, so the reference to Clause 94 is unnecessary. Clause 111 does refer to Annex 93B in its introduction so a reference to the channel definition there should be added instead.

Change "93.9 and 94.4" to "93.9 or 111.9" in Table 93B-1.

Cl **34** *SC* **34** *P* **16** *L* **1** # 214

Dawe, Piers Nvidia

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

When Clause 34, "34. Introduction to 1000 Mb/s baseband network" and "44. Introduction to 10 Gb/s baseband network" were named, IEEE Std 802.3 had a very long title based on CSMA/CD. Section 5 starts with "56. Introduction to Ethernet for subscriber access networks". Then we have "80. Introduction to 40 Gb/s and 100 Gb/s networks" and similar, which at least fix the technical problem with 34 and 44 (many of these PMDs are not baseband) and the grammatical problem (these sections contain more than one thing). But nearly all the PHY types in sections 3, 4, 6 to 9 cannot be "networks", they must be point-to-point links. The overview subclauses talk about "Gigabit Ethernet", "10 Gigabit Ethernet" and so on.

SuggestedRemedy

Change the titles of 34, 44, 80, 105, 116, 125 and 131 to "34. Introduction to Gigabit Ethernet" and similar.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change the title of Clause 34 to:
" Introduction to 1000 Mb/s baseband networks"
Change the title of Clause 44 to:
"Introduction to 10 Gb/s baseband networks"

Cl **130** *SC* **130.7.1.8** *P* **5192** *L* **10** # 215

Dawe, Piers Nvidia

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

Jitter measured on 1010 is not DCD nor EOJ, and not exactly one +/- the other (sign unknown)

SuggestedRemedy

If the intention is to control even-odd jitter, that and duty cycle distortion, or a combination, it would be better to use the method of 92.8.3.8.1 (using PRBS9).
If the intention is to control duty cycle distortion alone, the square wave method of 72.7.1.8 could work but puts undue burden on any CRU in the measurement.

Response *Response Status* **C**

REJECT.

[Editor's note: Page changed from 460 to 5192]

The comment appears to relate to the sentence "The duty cycle distortion test pattern shall consist of alternating ones and zeros (i.e., 10101010...)".

The comment does not claim any issue arising from its existing definitions.

The method of 92.8.3.8.1 cannot be used because PRBS9 is not defined as a test pattern for 5GBASE-R PHYs. In addition, a change to the test method may lead to changes in the measured value which would require the limits to be re-evaluated.

The suggested remedy does not contain sufficient details to implement a change to the draft.

Cl **72** *SC* **72.7.1.8** *P* **3055** *L* **42** # 216

Dawe, Piers Nvidia

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

There seems to be a discrepancy in the definition of "duty cycle distortion" in this clause. 72.7.1.8 says the test pattern shall consist of no fewer than eight symbols of alternating polarity, while 72.7.1.9 says "measured ... in a ... repeating 0101 bit sequence".

SuggestedRemedy

If the intention is to control even-odd jitter, that and duty cycle distortion, or a combination, it would be better to use the method of 92.8.3.8.1 (using PRBS9).
If the intention is to control duty cycle distortion alone, the square wave method could work but puts undue burden on any CRU in the measurement.
5GBASE-KR (130.7.1.8 and 130.7.1.9) could be aligned.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

[Editor's note: Page changed from 505 to 3055]

The suggested remedy would be a significant change from the existing method, and a justification for it has not been provided.

However, the comment highlights a wording discrepancy between two subclauses in Clause 72, and an additional discrepancy with Clause 130. This can be addressed without changing the method. These discrepancies are addressed in the response to comment #217.

Cl **72** *SC* **72.7.1.9** *P* **3056** *L* **1** # 217

Dawe, Piers Nvidia

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

In general, or in test equipment, a 1010 pattern at the signalling rate is not clock-like. If unqualified, the clock would be twice as fast, one cycle per UI. This is like a half-rate clock.

SuggestedRemedy

One could say "in a repeating 0101 bit sequence like a half-rate clock", but as this parenthetical "clock-like" is not needed for a clear and understandable definition, it can be deleted. Also in 130.7.1.9, the only other occurrence I found in sections 5 to 9.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

[Editor's note: Page changed from 506 to 3056]

In 72.7.1.8, change:
"The duty cycle distortion test pattern shall consist of no fewer than eight symbols of alternating polarity."
to:
"The duty cycle distortion test pattern shall consist of no fewer than eight symbols of alternating polarity (e.g., a 10101010... bit sequence)."

In 130.7.1.8, change:
"The duty cycle distortion test pattern shall consist of alternating ones and zeros (i.e., 10101010...)."
to:
"The duty cycle distortion test pattern shall consist of no fewer than eight symbols of alternating polarity (e.g., a 10101010... bit sequence)."

In 72.7.1.9, change:
"(as measured at the mean of the high- and low-voltage levels in a clock-like repeating 0101 bit sequence)"
to:
"(as measured at the mean of the high and low voltage levels in a repeating 0101 bit sequence)"

Make the same change in 128.7.1.9 and 130.7.1.9.

Cl **72** *SC* **72.7.1** *P* **3051** *L* **29** # 218

Dawe, Piers Nvidia

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

If the intention is to control something other than only the average discrepancy between the lengths of ones and zeros across a rich pattern...

SuggestedRemedy

"Duty Cycle Distortion" here may be better renamed to "even-odd jitter" as in Clause 93.

Response *Response Status* **C**

REJECT.

[Editor's note: Page changed from 501 to 3051]

This is an established specification and the comment does not claim any issue arising from its existing definitions. Measurement results and compliance would not be affected by the suggested parameter renaming.

The suggested remedy is a change of established terminology that may cause unnecessary disruptions.

Cl **72** *SC* **72.7.1.8** *P* **3055** *L* **42** # 219

Dawe, Piers Nvidia

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

There seems to be a discrepancy in the definition of "duty cycle distortion" in this clause. 72.7.1.8 says the test pattern shall consist of no fewer than eight symbols of alternating polarity, while 72.7.1.9 says "measured ... in a ... repeating 0101 bit sequence".

SuggestedRemedy

Whether the intention is to control duty cycle distortion, even-odd jitter, both, or a combination, it would be better to use the method of 92.8.3.8.1 (using PRBS9). 5GBASE-KR (130.7.1.8 and 130.7.1.9) could follow.

Response *Response Status* **C**

REJECT.

[Editor's note: Page changed from 505 to 3055]

See the response to #215. Note that PRBS9 is not a defined test pattern for 10GBASE-R PHYs and cannot be the basis for the test method.

Cl **96** *SC* **96.11.4.5** *P* **3919** *L* **35** # 220

Zimmerman, George — ADI, APL Gp, Cisco, CommScope, Marvell, SenTekS

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

The referenced requirement (MDI return loss) is different when clause 104 is implemented: "When a Clause 104 Type A or Type C PI is encompassed within the MDI, the MDI return loss (RL) shall meet or exceed Equation (96-12) for all frequencies from 1 MHz to 66 MHz (with 100 ohm reference impedance) at all times when the PHY is transmitting data or control symbols." This is not captured in the PICS, only the non-clause 104 requirement is captured, and is captured as mandatory

SuggestedRemedy

Insert Option for clause 104 powering in 96.11.3 Major Capabilities and Options, (*POWER |'PHY Implemented with Clause 104 Power' |104 | | Yes[] No[]) ,
Change PICS item MDI2 as follows: description to "MDI return loss without Clause 104 power", Status to "!POWER", change Support to "Yes[] No[] NA[]"
Insert new PICS item MDI3 after MDI2 (and renumber subsequent PICS), as shown: MDI3 | MDI return loss with Clause 104 power | 96.8.2.1 | Meet or exceed Equation (96-12) for all frequencies from 1 MHz to 66 MHz (with 100 ohm reference impedance) at all times when PHY is transmitting data or control symbols." | M: POWER | Yes[] No[] NA[]

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Implement the suggested remedy with editorial license.

Cl **96** *SC* **96.11.4.8** *P* **3917** *L* **15** # 221

Zimmerman, George — ADI, APL Gp, Cisco, CommScope, Marvell, SenTekS

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

The referenced requirement (droop) is different when clause 104 is implemented: "When a Clause 104 Type A or Type C PI is encompassed within the MDI, the magnitude of both the positive and negative droop measured with respect to an initial peak value after the zero crossing and the value 500 ns after the initial peak, shall be less than 60%." This is not captured in the PICS, only the non-clause 104 requirement is captured, and is captured as mandatory

SuggestedRemedy

Insert Option for clause 104 powering in 96.11.3 Major Capabilities and Options, (*POWER |'PHY Implemented with Clause 104 Power' |104 | | Yes[] No[]) , [note if previous comment is accepted, this is already done]
Change PICS item PME14 as follows: description to "The positive and negative droop without Clause 104 power", Status to "!POWER", change Support to "Yes[] No[] NA[]"
Insert new PICS item PME15 after PME14 (and renumber subsequent PICS), as shown: PME14 | The positive and negative droop with Clause 104 power | 96.5.4.1 | Be less than 60% with respect to an initial peak value after the zero crossing and the value 500 ns after the initial peak" | M: POWER | Yes[] No[] NA[]

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Implement the suggested remedy with editorial license.

Cl **146** *SC* **146.3.3.5.1** *P* **5812** *L* **9** # 222

Reed, Charity — UNH-IOL

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

The "n" in Table 146-3 for Sy should be "n-1". As it is written now it implies the "n" is the same for Sy and TA, TB, TC, however clause 146.3.3.1.2 Functions, states in the description for RND_SSD4, RND_ESD4, & RND_ESD_ERR4 that the input is Syn-1[4] not Syn[4]. Additionally Figure 146-5 PCS Transmit state diagram, shows the input to these functions to be Syn-1[4] not Syn[4].

SuggestedRemedy

Replace "Syn[4] = 0" with "Syn-1[4] = 0"

Replace "Syn[4] = 1" with "Syn-1[4] = 1"

Response *Response Status* **C**

ACCEPT.

Cl **146** *SC* **146.3.4.1.2** *P* **5814** *L* **17** # 223

Reed, Charity UNH-IOL

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

check_idle is insufficiently defined which may result in the loss of multiple valid packets received at line rate. In a link between device A and device B if device A enters the BAD SSD state of Figure 146-9 and device A's check_idle implementation requires > 20 code-groups in order to set check_idle = TRUE and device B is sending frames at line rate then device A could miss thousands of received frames as device A would remain in BAD SSD until rcv_max_timer_done = TRUE causing rcv_overrrun_detected = TRUE and then causing device A to go to the LINK FAILED state of Figure 146-9 and then back to IDLE. However once in IDLE device A would go to BAD SSD again in the likely scenario that upon entering the IDLE state device B was in the middle of a frame instead of in between frames. This process will continue until either device B stops sending line-rate frames OR device A happens to reenter IDLE outside of receiving a packet. There is no mechanism in place that would cause the link to drop and thus force a retraining as the LINK FAILED state does not cause the link to drop.

SuggestedRemedy

Change the definition of check_idle from "The check_idle function indicates a reliable detection of the idle data stream." to "A function used by the PCS Receive process to detect the reception of valid idle code-groups after an error condition during the process. The check_idle function operates on not more than twenty consecutive code-groups after de-interleaving rx_symb_vectors. The check_idle function then returns a Boolean value indicating whether or not all twenty or less consecutive code-groups after de-interleaving rx_symb_vectors are valid in idle mode encoding, as specified in 146.3.3.5.1."

A number less than 20 may be more desireable but as the specification is already released anything less than 20 may result in a conformance issue for already released devices, while anything more than 20 would be a definite interoperability issue as described. However 8 was the initially proposed number during the development of the specification.

Response *Response Status* **C**

REJECT.

The change suggested is a new feature and introduces new requirements which could cause previously compliant devices be noncompliant. While the resulting condition is a performance degradation, it is the result of an error condition and does recover.

Some interest was expressed in a change that would not render existing implementations non-compliant.

Cl **96** *SC* **96.3.3.2.1** *P* **3877** *L* **31** # 224

Reed, Charity UNH-IOL

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

The current reference in the definition for IDLE references only 96.3.3.3.6, which in turn defines Generation of (TAn, TBn) when tx_mode = SEND_I. This would indicate that a device receiving transmissions with tx_mode = SEND_N from a link partner should not consider the received transmissions as IDLE and transition from the IDLE state to the BAD SSD state in the PCS Receive state diagram. Such behavior is undesireable as it would prevent the reception of any frames if frames are sent immediately after transmitting with tx_mode = SEND_N.

SuggestedRemedy

Replace "IDLE
A sequence of vectors of ternary symbols representing the special code-group generated in Idle mode, as specified in 96.3.3.3.6."

with "IDLE
A sequence of vectors of ternary symbols representing the special code-group generated in Idle mode, as specified in 96.3.3.3.6 and 96.3.3.3.8."

Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.3.3.2** *P* **1590** *L* **5** # 225

Reed, Charity UNH-IOL

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

Improper alignment/indentation in the middle of the function definition for check_idle

SuggestedRemedy

Change line 5 to be indented at the same level as line 4 and bring the remainder of the sentence up from lines 6 onward to line 5. This way the full definition of check_idle is clear and it does not present as if defining check_idle followed by defining "and"

Response *Response Status* **C**

ACCEPT.

Cl **40** *SC* **40.3.1.3.5** *P* **1577** *L* **13** # 226

Reed, Charity UNH-IOL

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

"¦" used instead of "=" in paragraph

SuggestedRemedy

Replace "TXDn ¦" with "TXDn ="

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

[Editor's note: Edited suggested remedy to address issues caused by the inclusion of formatted text in the comment.]

Change the "¦" character to "≠" (inequality sign). Also apply a similar change in item PCT9 of 40.12.4.

It was also noted that there are two instance of "0x'0F" in that same paragraph that should be "0x0F". Change these and other instances of "0x'" to "0x", when used to represent hexadecimal numbers, that are found in the draft with editorial license.

Cl **40** *SC* **40.3.1.3.5** *P* **1577** *L* **31** # 227

Reed, Charity UNH-IOL

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

"tn_enable" referenced when it should be "tx_enable"

SuggestedRemedy

Replace "tn_enable" with "tx_enable"

Response *Response Status* **C**

ACCEPT.

Cl **32** *SC* **32.1.2.3** *P* **1222** *L* **12** # 228

Reed, Charity UNH-IOL

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

"tn_enable" referenced when it should be "tx_enable"

SuggestedRemedy

Replace "tn_enable" with "tx_enable"

Response *Response Status* **C**

ACCEPT.

Cl **32** *SC* **32.3.3** *P* **1226** *L* **7** # 229

Reed, Charity UNH-IOL

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

"tx_enablen" and others should have the "n" as a subscript (similar to how 40.3.4.1 is done)

SuggestedRemedy

Replace "tx_enablen" with "tx_enable<subscript n>"
Replace "ESDn" with "ESD<subscript n>"
Replace "An" with "A<subscript n>"
Replace "Bn" with "B<subscript n>"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

[Editor's note: Edited suggested remedy to address issues caused by the inclusion of formatted text in the comment.]

In Figure 32-11, make indices "n" subscripts as proposed in the suggested remedy.

Cl **144** *SC* **144.3.7.7** *P* **5591** *L* **27** # 230

Hajduczenia, Marek Charter

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

The 803.3ca specification describes the ONU re-registration feature that allows a registered ONU to be re-registered in order to update various registration parameters without ONU going through full discovery and registration process. This feature is mentioned in 144.3.6.4 and in Table 144-5. It is also supported by the ONU Registration state diagram 144-22.
However, a problem has been identified with the OLT registration state diagram 144-21, that makes ONU re-registration impossible.

SuggestedRemedy

Apply modifications to OLT Registration Completion state diagram as shown in the attached file 802_3ca_reregistration_1.pdf, slide 6, and apply changes to the definition of DeregistrationTrigger variable, as shown on slide 7.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

[Editor's note: Changed Comment Type to "T" from "TR" since it was submitted after the ballot closed.]

Implement the suggested remedy with editorial license.