Cl **FM**   *SC* **FM**   *P* **8**   *L* **13**   # 56

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So
Comment Type   **E**   *Comment Status* **X**

Editor titles have shifted with Val coming back on board, put editors in alphabetical order

SuggestedRemedy

Change "Editor-in-Chief" on line 14 to "Technical Editor"
Move "Valerie Maguire, … Managing Editor" before "George Zimmerman,… Technical Editor"

Proposed Response   *Response Status* **O**

Cl **00**   *SC* **0**   *P* **8**   *L* **14**   # 20

Jones, Chad   Cisco Systems, Inc.
Comment Type   **E**   *Comment Status* **X**

George is the Technical Editor and Val is the Managing Editor.

SuggestedRemedy

Change George's title to Technical Editor

Proposed Response   *Response Status* **O**

Cl **1**   *SC* **1.5**   *P* **21**   *L* **36**   # 57

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So
Comment Type   **E**   *Comment Status* **X**

Add TPS "Transmit Power Signature" to abbreviations

SuggestedRemedy

Add TPS "Transmit Power Signature" to abbreviations

Proposed Response   *Response Status* **O**

Cl **30**   *SC* **30.16.1.1.8**   *P* **25**   *L* **1**   # 1

Maguire, Valerie   Copperopolis; aff'l w/ CME Consulting
Comment Type   **E**   *Comment Status* **X**

Tidy Editing Instruction text so that insertion instructions are consistent throughout the document.

SuggestedRemedy

P25 L1: Replace "Insert new subclauses (30.16.1.1.8 through 30.16.1.1.14)" with "Insert new subclauses 30.16.1.1.8 through 30.16.1.1.14..."; P26 L50: Replace "Insert 30.17..." with "Insert new subclause 30.17…"; P37 L19: "Insert 79.3.9..." with "Insert new subclause 79.3.9…"; P48 L1: "Insert 148.4.7 ..." with "Insert new subclause 148.4.7…"; P54 L3: Replace "Insert new section 148.5.3.a..." with "Insert new subclause 148.5.3.a...; P54 L13: Replace "Insert new section 148.5.3.7..." with "Insert new subclause 148.5.3.7...

Proposed Response   *Response Status* **O**

Cl **45**   *SC* **45.2.3.1.2**   *P* **33**   *L* **6**   # 58

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So
Comment Type   **T**   *Comment Status* **X**

The inclusion of 10BASE-T1M and 10BASE-T1S can't work as written in 45.2.3.1.2 because the PCS type selection does not include these phy types (or any of the BASE-T1 PHY types). Loopback needs to be controlled through the dedicated PHY register 3.2291, at bit 3.2291.14. The 3.2291.14 bit can't be a copy of 3.0.14, but since 10BASE-T1S isn't in 4.2.3.1.2, this is just cleanup, I believe, within the scope of 802.3da.   A maintenance request is in preparation to deal with the other BASE-T1 PHYs, references to 45.2.3.1.2, and copy instructions.

SuggestedRemedy

Remove 45.2.3.1.2 from the draft.

At P34 L11, change editing instruction to "Change 45.2.3.72.2 as follows:" (removing "first paragraph"), and add the other 2 paragraphs of 45.2.3.72.2 to the draft, with the third paragraph shown deleted (indicated below by </SO> strikeout):

"The default value of bit 3.2291.14 is zero.

</SO> Bit 3.2291.14 is a copy of 3.0.14, and setting or clearing either bit shall set or clear the other bit. Setting
either bit shall enable loopback. </SO>"

At P73 L35 (168.4.4), change "register 3.0.14, defined at 45.2.3.1.2" to "register 3.2291.14, defined at 45.2.3.72.2"

Proposed Response   *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general

COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn

SORT ORDER: Page, Line

Pa **33**
Li **6**

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Cl **79** *SC* **79.5** *P* **38** *L* **21** # 60

Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So
Comment Type **T** *Comment Status* **X**

Need to add PICS for PLCA TLVs

SuggestedRemedy

Add 79.5 and 79.5.3 to the draft, adding new row for:
item *PL | feature PLCA TLV | Subclause 79.3.9 | Value <blank> | Status O | Support Yes[ ] No[ ]

and, insert 79.5.13 after 79.5.12 PICS table with entries:
Item | Feature | Subclause| Value/Comment | Status | Support
PLC1 | PLCA support/status field | 79.3.9.1 | Contains a bitmap identifying PLCA and DPLCA support defined in Table 79-21 | PL:M | Yes [] N/A [ ]
PLC2 | node ID field | 79.3.9.2 | Contains an integer value indicating the PLCA nodeId | PL:M | Yes [] N/A [ ]
PLC3 | PLCA TLV usage rules | 79.3.9.3 | PLCA support/status TLV should contain no more than one PLCA TLV | PL:O | Yes [] No [] N/A[]

Proposed Response *Response Status* **O**

Cl **148** *SC* **148.4.4.3** *P* **41** *L* **42** # 61

Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So
Comment Type **E** *Comment Status* **X**

Missing space after period "claim.See"

SuggestedRemedy

insert space between period and "See"

Proposed Response *Response Status* **O**

Cl **148** *SC* **148.4.4.2** *P* **41** *L* **42** # 17

Law, David HPE
Comment Type **E** *Comment Status* **X**

Typo.

SuggestedRemedy

... type of claim.See 148.4.7.2 ..' should read '... type of claim. See 148.4.7.2 ...' (misisng space).

Proposed Response *Response Status* **O**

Cl **148** *SC* **148.4.4.6** *P* **43** *L* **4** # 3

Baggett, Tim Microchip
Comment Type **E** *Comment Status* **X**

Cl 1.2: Qualifiers described by short phrases are enclosed in parentheses. The Term "!dplca_en" should be enclosed in parenthesis.
More examples are identified in the PDF related to this comment. Changes are proposed to improve readability and to maintain consictency with the style used when originally creating the Clause 147 and 148 state diagrams.

SuggestedRemedy

See Baggett_3da_D1p3_CL148_StateDiagrams.pdf and enclose highlighted terms with parenthesis.

This change applies to:
Fig 148-3 P43
Fig 148-4 P44
Fig 148-8 P51

Proposed changes highlighted in orange. In general, if the transition contained only a single boolean term such as "!variable" or "variable = CONST" I then left it alone or highlighted in yellow as this seemed to be consistent and more readable. Liberal editorial license granted to maintain readabilty and consistency.

Proposed Response *Response Status* **O**

Cl **148** *SC* **148.4.4.6** *P* **43** *L* **15** # 9

Law, David HPE
Comment Type **T** *Comment Status* **X**

The new variable dplca_txop_node_count is used in Figure 148–3 'PLCA Control state diagram' but it is not defined.

SuggestedRemedy

Add a definition of the dplca_txop_node_count variable to subclause 148.4.4.2 'PLCA Control variables'.

Proposed Response *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn
SORT ORDER: Page, Line

Pa **43**
Li **15**

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Cl **148**　　*SC* **148.4.4.6**　　　　*P* **43**　　　*L* **26**　　　# 7

Law, David　　　　　　　　　　HPE

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

The transition from the RECOVER state to the WAIT_TO state in Figure 148–3 'PLCA Control state diagram, part a' is missing a transition qualifier. Assuming this is an unconditional transition, the transition qualifier should be UCT (see IEEE Std 802.3-2022 subclause 21.5.3, item d).

SuggestedRemedy

Add the transition qualifier 'UCT' to the transition from the RECOVER state to the WAIT_TO state in Figure 148–3.

Proposed Response　　*Response Status* **O**

Cl **148**　　*SC* **148.4.4.6**　　　　*P* **43**　　　*L* **44**　　　# 11

Law, David　　　　　　　　　　HPE

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

The new variable dplca_txop_node_id is used in the SYNCING state of figure 148–3 'PLCA Control state diagram', but it is not defined.

SuggestedRemedy

Add a definition of the dplca_txop_node_id variable to subclause 148.4.4.2 'PLCA Control variables'.

Proposed Response　　*Response Status* **O**

Cl **148**　　*SC* **148.4.4.6**　　　　*P* **44**　　　*L* **21**　　　# 8

Law, David　　　　　　　　　　HPE

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

I don't believe that the COL variable has been used in the Clause 148 PLCA Control state diagram before. As a result, it needs to be added to the additions to subclause 148.4.4.2 'PLCA Control variables' in the IEEE P802.3da draft.

SuggestedRemedy

[1] Change the text 'Insert new variables dplca_en, dplca_txop_end, ...' in subclause 148.4.4.2 to read 'Insert new variables COL, dplca_en, dplca_txop_end, ...'

[2] Add the following definition to subclause 148.4.4.2:

COL
The MII signal COL.
Values: TRUE or FALSE

Proposed Response　　*Response Status* **O**

Cl **148**　　*SC* **148.4.4.6**　　　　*P* **44**　　　*L* **37**　　　# 10

Law, David　　　　　　　　　　HPE

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

The action 'start_append_commit timer' in the BURST state of Figure 148–4 'PLCA Control state diagram' should read 'start append_commit_timer' (remove the '_' after 'start' and add an '_' between 'commit' and 'timer'.

SuggestedRemedy

See comment.

Proposed Response　　*Response Status* **O**

Cl **148**　　*SC* **148.4.5.7**　　　　*P* **45**　　　*L* **2**　　　# 21

Jones, Chad　　　　　　　　　　Cisco Systems, Inc.

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

empty page. Is that because of the "change figure" note and the space will go away once integrated in 802.3? Or is there a hidden page break?

SuggestedRemedy

fix blank page.

Proposed Response　　*Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected　　RESPONSE STATUS: O/open W/written C/closed Z/withdrawn
SORT ORDER: Page, Line

Pa **45**
Li **2**

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7/5/2024 9:08:45 AM

Cl **148** *SC* **148.4.5.7** *P* **46** *L* **14** # 5

Baggett, Tim Microchip

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

Condition for transition from WAIT_IDLE to IDLE does not match fix #2 proposed on Page 11 of https://www.ieee802.org/3/da/public/032322/beruto_3da_01_230222_plca_fixes.pdf

SuggestedRemedy

Change the condition for transition from WAIT_IDLE to IDLE from:
  MCD * (!CRS) * (!committed)
To:
  (!CRS) * (!committed)

Proposed Response *Response Status* **O**

Cl **148** *SC* **148.4.5.7** *P* **47** *L* **50** # 87

Zimmerman, George CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

Two arrowheads where path join in Figure 148-6 - 2 instances - (there should be only the one in the joining arc…

SuggestedRemedy

delete arrowhead coming from the left at P47 L50 (join from WAIT_MAC and TRANSMIT), and
delete downward arrowhead from FLUSH state at P47 L50 where arc to "C" joins with arc form WAIT_MAC & TRANSMIT.

Proposed Response *Response Status* **O**

Cl **148** *SC* **148.4.7.1** *P* **48** *L* **18** # 22

Jones, Chad Cisco Systems, Inc.

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

unneeded comma
"HARD claims (with COMMIT requests), "

SuggestedRemedy

delete the comma after "requests)"

Proposed Response *Response Status* **O**

Cl **148** *SC* **148.4.7.1** *P* **48** *L* **23** # 23

Jones, Chad Cisco Systems, Inc.

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

"DPLCA" versus "D-PLCA". Every instance on this page includes the hyphen.

SuggestedRemedy

Change DPLCA to D-PLCA. Editors given license to search and replace through the document.

Proposed Response *Response Status* **O**

Cl **148** *SC* **148.4.7.2** *P* **48** *L* **31** # 18

Law, David HPE

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

The variable curID is defined in subclause 148.4.7.2 'Variables', however, it doesn't seem to be used in the D-PLCA state diagrams in Figures 148–8 and 148–9.

SuggestedRemedy

Remove the variable curID if it isn't used.

Proposed Response *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn
SORT ORDER: Page, Line

Pa **48**
Li **31**

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7/5/2024 9:08:45 AM

Cl **148**　　*SC* **148.4.7.2**　　　　*P* **49**　　　*L* **6**　　　# 12

Law, David　　　　　　　　　　　　HPE

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

The definition of the txop_claim_table variable (that's actually an array) says:

This variable contains the claim state of the 256 transmit opportunities IDs. The claim state of each ID can be:
a. NONE, meaning ...
b. SOFT, meaning ...
c. HARD, meaning ...

We don't normally use a letter list to define the variable values, see the dplca_txop_claim variable defined in subclause 148.4.4.2 'PLCA Control variables' for an example.

SuggestedRemedy

Suggest that the text:

This variable contains the claim state of the 256 transmit opportunities IDs. The claim state of each ID can be:
a. NONE, meaning ...
b. SOFT, meaning ...
c. HARD, meaning ...

is changed to read:

This variable contains the claim state of the 256 transmit opportunities IDs. The claim state of each ID can be:
NONE, meaning ...
SOFT, meaning ...
HARD, meaning ...

Proposed Response　　　　*Response Status* **O**

Cl **148**　　*SC* **148.4.7.3**　　　　*P* **50**　　　*L* **9**　　　# 13

Law, David　　　　　　　　　　　　HPE

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

Although there is no rule, function names are generally all upper case, and that is the case for the existing functions in Clause 148 'PLCA Reconciliation Sublayer (RS)', see 148.4.5.3 'Functions'.

SuggestedRemedy

Suggest that the following changes be made to the function names.

max_hard_claim - > MAX_HARD_CLAIM
pick_free_txop -> PICK_FREE_TXOP
hard_claiming -> HARD_CLAIMING
soft_claiming -> SOFT_CLAIMING
clear_txop_table -> CLEAR_TXOP_TABLE
clear_soft_claims -> CLEAR_SOFT_CLAIMS

Proposed Response　　　　*Response Status* **O**

Cl **148**　　*SC* **148.4.7.5**　　　　*P* **51**　　　*L* **10**　　　# 14

Law, David　　　　　　　　　　　　HPE

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

The transition from the DISABLED state to the WAIT_BEACON state in Figure 148–8 'D-PLCA Control State Diagram' is missing a transition qualifier. Assuming this is an unconditional transition, the transition qualifier should be UCT (see IEEE Std 802.3-2022 subclause 21.5.3, item d).

SuggestedRemedy

Add the transition qualifier 'UCT' to the transition from the DISABLED state to the WAIT_BEACON state in Figure 148–8.

Proposed Response　　　　*Response Status* **O**

Cl **148**　　*SC* **148.4.7.5**　　　　*P* **51**　　　*L* **32**　　　# 86

Zimmerman, George　　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

Two arrowheads where path join in Figure 148-8 (there should be only the one from the side…

SuggestedRemedy

Delete rising arrowhead at P51 L32 (right side of page)

Proposed Response　　　　*Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general　　　　*Pa* **51**　　　Page 5 of 19
COMMENT STATUS: D/dispatched A/accepted R/rejected　　RESPONSE STATUS: O/open W/written C/closed Z/withdrawn　　*Li* **32**　　7/5/2024 9:08:45 AM
SORT ORDER: Page, Line

Cl **148**   *SC* **148.4.7.5**   *P* **51**   *L* **49**   # 15

Law, David   HPE

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

The variable dplca_txop_node_count is used in Figure 148–8 'D-PLCA Control State Diagram' but is not defined in subclause 148.4.7.2 'Variables'.

SuggestedRemedy

As noted in another comment, the variable dplca_txop_node_count is also used in Figure 148–3 'PLCA Control state diagram' but is not defined. Assuming that comment is accepted, and a definition of dplca_txop_node_count is added to subclause 148.4.4.2, suggest that the following definition is added to subclause 148.4.7.2 'Variables':

dplca_txop_node_count
   See 148.4.4.2.

Proposed Response   *Response Status* **O**

Cl **148**   *SC* **148.4.7.6**   *P* **52**   *L* **17**   # 59

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

Clean up box on TXOP_END -

SuggestedRemedy

delete overlayed boxes on TXOP_END state in state diagram

Proposed Response   *Response Status* **O**

Cl **148**   *SC* **148.4.7.6**   *P* **52**   *L* **41**   # 16

Law, David   HPE

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

The transitions from the UPDATE_SOFT and the UPDATE_HARD states to the NOTIFY state and from the DISABLED state to the WAIT_TXOP_END state in Figure 148–9 'D-PLCA Aging State Diagram' are missing transition qualifiers. Assuming that these are unconditional transitions, the transition qualifier should be UCT (see IEEE Std 802.3-2022 subclause 21.5.3, item d).

SuggestedRemedy

Add the transition qualifier 'UCT' to the transitions from the UPDATE_SOFT and the UPDATE_HARD states to the NOTIFY and from the DISABLED state to the WAIT_TXOP_END state in Figure 148–9.

Proposed Response   *Response Status* **O**

Cl **168**   *SC* **168.1**   *P* **55**   *L* **13**   # 24

Jones, Chad   Cisco Systems, Inc.

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

misplaced comma, needs to be after the parenthesis in this sentence. "...Trunk Connection Interface, or TCI (see 168.9) are..."

SuggestedRemedy

change to: "...Trunk Connection Interface or TCI (see 168.9), are..."

Proposed Response   *Response Status* **O**

Cl **168**   *SC* **168.1**   *P* **55**   *L* **18**   # 62

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

"connected to a mixing segment as defined in 168.8" - we are fond of saying 'as defined', but 168.8 doesn't DEFINE a mixing segment, it provides specifications for one. The mixing segment is defined in 1.4… the follow on sentence is a bit redundant to this as well ...

SuggestedRemedy

delete "as defined in 168.8."
Change "The mixing segment for the operation of the 10BASE-T1M PHY is defined in terms of performance requirements." to
"The performance requirements for the mixing segment are specified in 168.8."

Proposed Response   *Response Status* **O**

Cl **168**   *SC* **168.1**   *P* **55**   *L* **23**   # 63

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

Clause 147 is in the draft - should not be an external xref

SuggestedRemedy

Change Clause 147 to an active xref

Proposed Response   *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn
SORT ORDER: Page, Line

Pa **55**
Li **23**

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Cl **168**　　*SC* **168.1.2.1**　　　*P* **56**　　　*L* **43**　　　# 25

Jones, Chad　　　　　　　　　　Cisco Systems, Inc.

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

missing comma after "...between THEN and END..."

SuggestedRemedy

change to "...between THEN and END, ..."

Proposed Response　　　*Response Status* **O**

Cl **168**　　*SC* **168.2**　　　*P* **57**　　　*L* **3**　　　# 52

Zimmerman, George　　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

"The 10BASE-T1M PHY builds on the operation of the 10BASE-T1S PHY defined in Clause 147 when running half duplex in multidrop mode." suggests that the 10BASE-T1M PHY has modes other than multidrop - which isn't what is meant. A little wordsmithing of this introduction to 10BASE-T1M is needed to make it clear that the primary difference between the 10BASE-T1M and 10BASE-T1S PHY types is that T1M only supports multidrop.

SuggestedRemedy

Change first 2 sentences of first paragraph of 168.2 (making edits and reversing the order of the sentences):
The 10BASE-T1M PHY supports only shared media, i.e., multidrop, half duplex communications over a single balanced pair of conductors forming a mixing segment. The 10BASE-T1M PHY builds on the operation of the 10BASE-T1S PHY defined in Clause 147 when running half duplex in multidrop mode."

Proposed Response　　　*Response Status* **O**

Cl **168**　　*SC* **168.4.1**　　　*P* **60**　　　*L* **32**　　　# 64

Zimmerman, George　　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

The 10BASE-T1M PCS Reset bit is in 45.2.3.72.1 , not 45.2.3.72

SuggestedRemedy

Change 45.2.3.72 to 45.2.3.72.1

Proposed Response　　　*Response Status* **O**

Cl **168**　　*SC* **168.4.2.7**　　　*P* **66**　　　*L* **11**　　　# 6

Law, David　　　　　　　　　　HPE

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

The TXCMD_ENCODE function definition says that '... this function takes as its arguments the values of tx_cmd and hb_cmd variables ...' and the TXCMD_ENCODE function call in the SILENT state of Figure 168–4 'PCS Transmit state diagram, part a' reads TXCMD_ENCODE(tx_cmd, hb_cmd). The hb_cmd variable, however, is not defined anywhere, and the output of the function is not dependent on the variable.

I believe that the hb_cmd variable was used in Clause 147 10BASE-T1S PHY to control sending the heartbeat signal across and suspect that this has been copied across. Since, however, it was only used for the 10BASE-T1S PHY in full-duplex mode, and since the 10BASE-T1M only supports half-duplex mode, it should be deleted from the function definition and call.

SuggestedRemedy

[1] Change the text '... takes as its arguments the values of tx_cmd and hb_cmd variables and returns ...' in the definition of the TXCMD_ENCODE function in subclause 168.4.2.4 to read '... takes as its arguments the value of the tx_cmd variable and returns ..'.
[2] Change the third action in the SILENT state of Figure 168–4 'PCS Transmit state diagram, part a' to read 'tx_sym <= TXCMD_ENCODE(tx_cmd)'.

Proposed Response　　　*Response Status* **O**

Cl **168**　　*SC* **168.6.4.4.1**　　　*P* **80**　　　*L* **1**　　　# 68

Zimmerman, George　　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

This section is more than the Upper PSD, it doesn't make sense to have the upper PSD delineated by a section, the lower PSD, and the graph. So I suggest we drop the section headers and lump it all in to 168.6.4.4

SuggestedRemedy

Delete section header 168.6.4.4.1, Delete section header 168.6.4.4.2, add paragraph spacing between lines 9 & 10 (frequency range for equation 168-1 and "Lower PSD")

Proposed Response　　　*Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected　　RESPONSE STATUS: O/open W/written C/closed Z/withdrawn
SORT ORDER: Page, Line

Cl **168**   *SC* **168.4.4.1**   *P* **80**   *L* **10**   # 69

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

Lower PSD mask has been shown to be too loose, and consensus model uses a more typical PSD. Tightening of the PSD can be found in beruto_3da_20221114_emc_noise_margin.pdf slide 10.

SuggestedRemedy

Adopt lower PSD mask from beruto_3da_2022_1114_emc_noise_margin.pdf slide 10 up to 20 MHz (first lobe)
Replace equation 168-2 with
Lower PSD(f) = {

$$
\begin{cases}
-77 + 4*(f-2.5) & 2.5 <= f < 5 \\
-67 & 5 <= f < 12.5 \\
-67 - 2.5*(f - 12.5) & 12.5 <= f <= 16.5
\end{cases}
$$

} dBm/Hz

where f is the frequency in MHz; 2.5 <= f <= 16.5.

Proposed Response   *Response Status*   **O**

Cl **168**   *SC* **168.8**   *P* **82**   *L* **18**   # 50

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

Sentense is long, complex, and hard to understand, and does not adequately capture that the TCI's two-conductor connection may be integrated within the DTE. Would be better as mulitple simpler sentences:
"The mixing segment shall be a linear topology, with DTE attached at a TCI, where each TCI has two
connections on the mixing segment, one facing in the direction of the left edge termination of the mixing
segment (TC1) and one facing in the direction of the right edge termination of the mixing segment (TC2),
and a two-conductor connection facing the DTE (see Figure 168–18)."

SuggestedRemedy

Replace first sentence in 2nd paragraph of 168.8 with:
"The mixing segment shall be a linear topology, with DTE attached to a trunk at a TCI.
 Each TCI has two connections, TC1 and TC2, on the mixing segment, one facing in each direction toward an edge termination.
Additionally, each TCI has a two-conductor connection facing the DTE (see Figure 168-18). See 168.9 for more information on the TCI, which may be integrated within the DTE."

Proposed Response   *Response Status*   **O**

Cl **168**   *SC* **168.8**   *P* **82**   *L* **32**   # 26

Jones, Chad   Cisco Systems, Inc.

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

we spell out trunk connection interface after using it at least 6 times in this section. Move the text to the first instance on line 18.

SuggestedRemedy

page 82, line 18, change TCI to trunk connection interface (TCI)
line 32, change trunk connection interface (TCI) to TCI

Proposed Response   *Response Status*   **O**

Cl **168**   *SC* **168.8.2**   *P* **83**   *L* **52**   # 19

DiMinico, Christopher   PHY-SI/SenTekse/MC Communications

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

168.8.2 Return loss TBD

SuggestedRemedy

See diminico_SPMD_01_0724.pdf for TBD

Proposed Response   *Response Status*   **O**

Cl **168**   *SC* **168.9**   *P* **84**   *L* **23**   # 53

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

Language about TCI connection in 168.9 to PMA needs to be aligned to the figures and description elsewhere (e.g., 168.8) which refers to the DTE rather than the PMA, and includes service loops & stubs within the DTE.

SuggestedRemedy

At P84 L22: Change "PMA (and any associated stub or service loop)" to "DTE (including any associated stub or service loop)"

At P84 L44; P85 L11; P86 L3; P86 L 19; Change "PMA" to "DTE"

Proposed Response   *Response Status*   **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn
SORT ORDER: Page, Line

Pa **84**
Li **23**

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7/5/2024 9:08:45 AM

Cl **168**   *SC* **168.9.1.1**   *P* **86**   *L* **3**   # 27

Jones, Chad   Cisco Systems, Inc.
Comment Type **T**   *Comment Status* **X**
   TC3 still in the text, was removed last cycle.

SuggestedRemedy
   replace TC3 with TCI attachment

Proposed Response   *Response Status* **O**

Cl **168**   *SC* **168.9.1.1**   *P* **86**   *L* **3**   # 54

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So
Comment Type **T**   *Comment Status* **X**
   We missed one TC3. Since there is only one place the DTE or DTE load can be, it is not needed to be said. This language should be aligned with that in other sections.

SuggestedRemedy
   P86 L3 change "at TC3" to "at the TCI"

Proposed Response   *Response Status* **O**

Cl **168**   *SC* **168.9.1.1**   *P* **86**   *L* **3**   # 2

Maguire, Valerie   Copperopolis; aff'l w/ CME Consulting
Comment Type **T**   *Comment Status* **X**
   Remove TC3 terminology and align text with 168.9.2.

SuggestedRemedy
   Replace, "With the PMA (or simulated DTE load specified for the TCI) present at TC3," with "With a PMA or simulated DTE load present at the TCI attachment,"

Proposed Response   *Response Status* **O**

Cl **168**   *SC* **168.9.2**   *P* **86**   *L* **19**   # 55

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So
Comment Type **E**   *Comment Status* **X**
   The reference to "TCI attachment " suggests that the TCI is always detachable from the DTE - it isn't. The word attachment adds no clarity, so suggest we just say the DTE is present at the TCI.

SuggestedRemedy
   P86 L19 delete "attachment"

Proposed Response   *Response Status* **O**

Cl **168**   *SC* **168.10**   *P* **87**   *L* **28**   # 70

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So
Comment Type **T**   *Comment Status* **X**
   Unpowered PHYs need isolation requirements to prevent ground loops when powered and unpowered PHYs are mixed

SuggestedRemedy
   Replace text of Editor's note with - Comments needed to fill in isolation requirements for unpowered PHYs, particularly when locally-powered DTEs are mixed on the same mixing segment with DTEs powered through the mixing segment...

Proposed Response   *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn
SORT ORDER: Page, Line

Pa **87**
Li **28**

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7/5/2024 9:08:45 AM

Cl **169**　　*SC* **169.1.2**　　　　*P* **97**　　*L* **40**　　　# 92

Zimmerman, George　　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

When power is NOT on the same conductors as data, the interface isn't the TCI. This needs to be explained here…

SuggestedRemedy

Add the following to the first paragraph of 169.1.2 at the end (line 40):
" The interface of the power entity to the medium is the MPI, with connection points MP1 and MP2 to the power trunk. When the power is provided over the same pairs as data, the MPI and the TCI are the same connection to the medium and the MPI must also meet the requirements for the TCI needed for the phy (see, e.g., 168.9). However, when data and power are carried on separate conductors, the MPI may be a separate device from the TCI and the related TCI requirements do not apply."

Editor to replace references (including figures) to TC1, TC2, TCI references from the rest of the clause with references to MP1, MP2, and MPI, respectively.

Proposed Response　　　　*Response Status* **O**

Cl **169**　　*SC* **169.2**　　　　*P* **98**　　*L* **22**　　　# 4

Baggett, Tim　　　　　　　　Microchip

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

The sentence refers to a dc loop resistance measured from edge termination to edge termination.
Is this really a *loop* resistance? The word "loop" would indicate to me the resistance from one edge terminator down one segment conductor through the opposite edge terminator, back up the opposite segment conductor. Clearly this isn't what is intended.

SuggestedRemedy

Please consider if "loop resistance" is the correct term here.

Proposed Response　　　　*Response Status* **O**

Cl **169**　　*SC* **169.3**　　　　*P* **99**　　*L* **23**　　　# 28

Jones, Chad　　　　　　　　Cisco Systems, Inc.

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

inconsistent variable names. This comment needs processed with one against page 108, item 1 in table 169-5 to simplify the variable name to delete "(PON)".
on this page, the (min) and (max) need promoted back to normal text from subscript and remove the parenthesis.

SuggestedRemedy

remove parenthesis around min and max and promote this text from subscript to normal text.

Proposed Response　　　　*Response Status* **O**

Cl **169**　　*SC* **169.4.3**　　　　*P* **100**　　*L* **18**　　　# 29

Jones, Chad　　　　　　　　Cisco Systems, Inc.

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

We never mention more than one MPSE on a mixing segment. While the TF has agreed that they do not want to go to the effort of defining how two MPSEs behave on a mixing segment, they also agreed that they didn't want to prohibit one from devising a proprietary scheme. We should make this statement.

SuggestedRemedy

add this text at the end of line 18: "This standard assumes one MPSE per mixing segment. More than one MPSE per mixing segment is beyond the scope of this standard."

Proposed Response　　　　*Response Status* **O**

Cl **169**　　*SC* **169.4.3**　　　　*P* **100**　　*L* **32**　　　# 30

Jones, Chad　　　　　　　　Cisco Systems, Inc.

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

missing a word?
"depending on whether the specification in question is for exceeding dropping below a threshold"

SuggestedRemedy

add or: "depending on whether the specification in question is for exceeding or dropping below a threshold"

Proposed Response　　　　*Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general　　　　*Pa* **100**　　　Page 10 of 19
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn　　*Li* **32**　　　7/5/2024 9:08:45 AM
SORT ORDER: Page, Line

Cl **168**   *SC* **168.4.4.2**   *P* **101**   *L* **15**   # 72

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

mpse_enable, mpse_ready, mpd_type0_discovered, and mpd_type1_discovered are all boolean variables in the state diagram (used as TRUE/FALSE conditions). Their values must be TRUE or FALSE, not "enabled/disabled" or not defined.

SuggestedRemedy

see changes in zimmerman_3da_01_0724.pdf
text in 8023-169_proposed_SDfixes_simple.pdf

Proposed Response   *Response Status* **O**

Cl **169**   *SC* **169.4.4.3**   *P* **102**   *L* **15**   # 75

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

discover_backoff_timer isn't defined.

SuggestedRemedy

Insert: discovery_backoff_timer
A timer used to enforce the time between discovery cycles. See 169..4.6, and Table 169-3.

Proposed Response   *Response Status* **O**

Cl **169**   *SC* **169.4.4.3**   *P* **102**   *L* **16**   # 81

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

The TPS timer is in Table 169-5. Since the other timers have pointers, it should too.

SuggestedRemedy

Add "See Table 169-5" to the end of the description of ttpsdo_timer.

Proposed Response   *Response Status* **O**

Cl **169**   *SC* **169.4.4.3**   *P* **102**   *L* **16**   # 78

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

The inrush timer is in Table 169-5. Since the other timers have pointers, it should too.

SuggestedRemedy

Add "See Table 169-5" to the end of the description of mpse_inrush_timer.

Proposed Response   *Response Status* **O**

Cl **169**   *SC* **169.4.4.3**   *P* **102**   *L* **19**   # 79

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

missing period at the end of the decription of tdiscover_high_timer

SuggestedRemedy

add period to match other timers…

Proposed Response   *Response Status* **O**

Cl **169**   *SC* **169.4.4.4**   *P* **102**   *L* **38**   # 74

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

duplicate colon. (discover_short::)

SuggestedRemedy

delete one of the colons

Proposed Response   *Response Status* **O**

Cl **159**   *SC* **159.4.4.4**   *P* **102**   *L* **44**   # 89

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

is discover_high_var used for anything? Was it supposed to be? I can't find it in the state diagram.

SuggestedRemedy

delete "discover_high_var" from outputs of do_discovery_high function (P102 L44)

Proposed Response   *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Pa* **102**   Page 11 of 19
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *Li* **44**   7/5/2024 9:08:45 AM
SORT ORDER: Page, Line

Cl **169**　　*SC* **169.4.4.5**　　　　*P* **104**　　　*L* **1**　　　# 65

Zimmerman, George　　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So
Comment Type　**E**　　　*Comment Status* **X**

In Figures 169-3 and 169-4 there are connector tags A, C, and D, but no "B". Did we miss something?

SuggestedRemedy

Change tags C and D to B and C (P104 L2, P104 L53, P105 L2, P105 L43, P105 L52)

Proposed Response　　　*Response Status* **O**

Cl **168**　　*SC* **168.4.4.5**　　　　*P* **104**　　　*L* **11**　　　# 71

Zimmerman, George　　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So
Comment Type　**T**　　　*Comment Status* **X**

unconditional entry to IDLE on 'discover_fault' must be conditioned on mpse_enable, or else it conflicts with the entry to DISABLE when the mpse is not enabled…

SuggestedRemedy

change leftmost entry to IDLE from "discover_fault' to 'mpse_enable * discover_fault'

Proposed Response　　　*Response Status* **O**

Cl **169**　　*SC* **169.4.4.5**　　　　*P* **104**　　　*L* **23**　　　# 66

Zimmerman, George　　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So
Comment Type　**E**　　　*Comment Status* **X**

Below line 22 on Figure 169-3, and on all of Figure 169-4, the font size on transition conditions seems to have shrunk to 7 pt from the nominal 8pt.

SuggestedRemedy

Fix font size on transition conditions - all should be 8 pt (same as internal state processes)

Proposed Response　　　*Response Status* **O**

Cl **169**　　*SC* **169.4.4.5**　　　　*P* **104**　　　*L* **31**　　　# 31

Jones, Chad　　　　　　　　　Cisco Systems, Inc.
Comment Type　**E**　　　*Comment Status* **X**

transitions into left hand line missing arrowheads

SuggestedRemedy

add arrowheads to exit from DISCOVERY_HIGH_MARK1 at line 31, 40, and 52

Proposed Response　　　*Response Status* **O**

Cl **169**　　*SC* **169.4.4.5**　　　　*P* **105**　　　*L* **23**　　　# 32

Jones, Chad　　　　　　　　　Cisco Systems, Inc.
Comment Type　**E**　　　*Comment Status* **X**

transitions into left hand line missing arrowheads

SuggestedRemedy

add arrowheads to exit from DISCOVERY_HIGH_MARK4 at line 23 and 39

Proposed Response　　　*Response Status* **O**

Cl **169**　　*SC* **169.4.4.5**　　　　*P* **105**　　　*L* **30**　　　# 85

Zimmerman, George　　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So
Comment Type　**E**　　　*Comment Status* **X**

arrowheads missing where paths join in Figure 169-3 and 169-4

SuggestedRemedy

add arrowheads at line joinings at P105 L30, L40, L50 on the left side of the page, and P106 L22 and L39 (left hand side of page)

Proposed Response　　　*Response Status* **O**

Cl **169**　　*SC* **169.4.5**　　　　*P* **106**　　　*L* **10**　　　# 33

Jones, Chad　　　　　　　　　Cisco Systems, Inc.
Comment Type　**E**　　　*Comment Status* **X**

missing word: "the link to determine at least one MPD remains"

SuggestedRemedy

add if: "the link to determine if at least one MPD remains"

Proposed Response　　　*Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected　　RESPONSE STATUS: O/open W/written C/closed Z/withdrawn
SORT ORDER: Page, Line

Pa **106**
Li **10**

Page 12 of 19
7/5/2024 9:08:45 AM

Cl **169**   *SC* **169.4.6**   *P* **106**   *L* **27**   # 90

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

duplicate shall describing state diagram funciton (applying high or low mark voltage) in do_discovery_high and do_discovery_lowx states.

SuggestedRemedy

P106 L27 and P106 L36 change "shall supply" to "supplies"

Proposed Response   *Response Status*   **O**

Cl **169**   *SC* **169.4.6**   *P* **106**   *L* **28**   # 82

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

This behavior is contrary to the state diagram, the do_discovery_high (and low) functions are executed when a state is entered. The state diagram won't wait to do the measurement... it only waits for the exit. "The MPSE shall wait T_Mark_measure between the entrance of a DISCOVERY_HIGH_MARKx state and measurement of mark event current…" - there is no way to see when the measurement happens. Similarly for the T_Discover_measure waiting on line 37.

SuggestedRemedy

change "shall wait" to " waits" (2 instances, line 28 and line 37)
See state diagram and text changes in zimmerman_3da_01_0724.pdf
(text and diagrams also provided as a separate document 8023-169_proposed_Sdfixes_disc_diag.pdf)

Proposed Response   *Response Status*   **O**

Cl **169**   *SC* **169.4.6**   *P* **106**   *L* **31**   # 73

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

duplicate shall. The behavior when detecting a short circuit is shown in the state diagram. However, the criterion measured is in the function description as well.

SuggestedRemedy

change "the MPSE shall return to the BACKOFF state." to "the MPSE returns to the BACKOFF state"

Proposed Response   *Response Status*   **O**

Cl **169**   *SC* **169.4.6**   *P* **106**   *L* **44**   # 76

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

The BACKOFF state should reflect that the voltage is held at V_MPSE_reset, rather than have a separate "shall" here that is really describing state diagram behavior.

SuggestedRemedy

Add new function to 169.4.4.4 (in alphabetical order)
do_MPSE_reset
This function presents the reset event voltage (V_MPSE_reset) at the TCI.

Add "do_MPSE_reset" to the "BACKOFF" state in Figure 169-3.

Change "BACKOFF, it shall maintain…" to "BACKOFF, it maintains..." at P106 L44

Proposed Response   *Response Status*   **O**

Cl **169**   *SC* **169.4.6**   *P* **106**   *L* **47**   # 77

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

the T_Discovery check and condition is not in the state diagram. Given that the time through the state diagram is driven by the cascade through 5 high_mark state timers and 5 low mark state timers, the time for discovery is deterministic and less than 5*(high_time max + low_time max), so this condition is unnecessary.

SuggestedRemedy

At P106 L47-48 (169.4.6) delete "The MPSE shall complete discovery within TDiscovery as defined in Table 169–3."
(leave in place " If no valid and compatible discovery response is detected, the MPSE shall wait at least TBackoff before reattempting discovery. An MPSE may successfully complete discovery, but then opt not to power the link.")
At P106 L 51-52, delete "If discovery is not completed before the TDiscovery timer expires, the current discovery cycle shall be aborted
and the MPSE returns to BACKOFF."

Proposed Response   *Response Status*   **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Pa* **106**   Page 13 of 19
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *Li* **47**   7/5/2024 9:08:45 AM
SORT ORDER: Page, Line

Cl **169**   *SC* **169.4.6**   *P* **106**   *L* **51**   # **34**

Jones, Chad   Cisco Systems, Inc.

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

"If discovery is not completed before the TDiscovery timer expires, the current discovery cycle shall be aborted and the MPSE returns to BACKOFF."
this sentence belongs in the preceding paragraph as the second sentence.

SuggestedRemedy

move sentence, making paragraph at line 47 read:
"The MPSE shall complete discovery within TDiscovery as defined in Table 169–3. If discovery is not completed before the TDiscovery timer expires, the current discovery cycle shall be aborted and the MPSE returns to BACKOFF. If no valid and compatible..."

Proposed Response   *Response Status* **O**

Cl **169**   *SC* **169.4.6**   *P* **107**   *L* **1**   # **35**

Jones, Chad   Cisco Systems, Inc.

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

"Under all conditions, an MPSE shall present an invalid MPD discovery signature with one of the attributes as defined in Table 169–4."
This sentence is copied from Cl 33 or 145. As those are point to point PoE, two PSEs should never be on the same link. It has been agreed that we want to allow more than one PSE per mixing segment. This sentence disallows that. Additionally, there is no need for this restriction for MPoE.

SuggestedRemedy

Delete the sentence.

Proposed Response   *Response Status* **O**

Cl **169**   *SC* **169.4.7**   *P* **108**   *L* **6**   # **36**

Jones, Chad   Cisco Systems, Inc.

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

V{MPSE(PON)} is lengthy. We don't have an VMPSE that we need it differentiate from, so why have the (PON)? Delete (PON). This harmonizes with a comment made against page 99.

SuggestedRemedy

Delete (PON) from the symbol name of item 1 of Table 169-5 on line 6 and from the text in 169.4.10 on line 54.

Proposed Response   *Response Status* **O**

Cl **169**   *SC* **169.4.7**   *P* **108**   *L* **9**   # **37**

Jones, Chad   Cisco Systems, Inc.

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

Item 2 of Table 169-5: we should not define the max as 100W as this will confuse some readers, mostly from the enforcement community. I suggest we delete the 100 and replace with an emdash. All that is important is we define the minimum power the MPSE shall deliver.
to convey the upper limit, we should add V{MPSE}max on line 40 in 168.4.8, after "External safety requirements limit the power an MPSE can supply." with some further descriptive text at the end of the paragraph.

SuggestedRemedy

delete 100 in Table 169-5 item 2, two places. Replace with emdash.
Change line 40 to: "External safety requirements limit the power an MPSE can supply, V{MPSE}max."
add "For these reasons, V{MPSE}max is left undefined in Table 169-5, Item 2."

Proposed Response   *Response Status* **O**

Cl **169**   *SC* **169.4.6**   *P* **108**   *L* **43**   # **80**

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

The discovery rejection criteria parameters seem to need description. They just say "Reject discovery" which is what the title of the table is…

SuggestedRemedy

Change Item 1 description to "Reject discovery - short circuit", and item 2 to "Reject discovery - open circuit"

Proposed Response   *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn
SORT ORDER: Page, Line

Cl **169**　　*SC* **169.4.11.1**　　　　*P***109**　　　*L***12**　　　# 38

Jones, Chad　　　　　　　　　Cisco Systems, Inc.

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

We define TPS requirements but never explain why it exists. There is a sentence at the end that alludes to the purpose, but we can do better. Add some descriptive text to start the section.

SuggestedRemedy

Add before the text on line 12: "TPS allows MPDs to have sleep states to minimize power consumption. Presence of TPS reports to the MPSE that there are active MPDs on a mixing segment that may be consuming very low power."

Proposed Response　　　*Response Status*　**O**

Cl **169**　　*SC* **169.5**　　　　　*P***109**　　　*L***27**　　　# 91

Zimmerman, George　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

"requiring power from the TCI" I believe power is drawn from the MPI…

SuggestedRemedy

change TCI to MPI at P109 L28

Proposed Response　　　*Response Status*　**O**

Cl **169**　　*SC* **169.4.8**　　　　*P***109**　　　*L***39**　　　# 83

Zimmerman, George　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

duplicate shall - Table 169-5 is already required…

SuggestedRemedy

change "shall be capable of" to "is capable of"

Proposed Response　　　*Response Status*　**O**

Cl **169**　　*SC* **169.5.2**　　　　*P***109**　　　*L***41**　　　# 101

Zimmerman, George　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

MPD TCI… If the clause 169 protocol runs on separate wires from the data,the interface is just an MPI. The MPI may also be the TCI, but it is always an MPI.

SuggestedRemedy

Change title of 169.5.2 from MPD TCI to MPD MPI.

Proposed Response　　　*Response Status*　**O**

Cl **169**　　*SC* **169.5.2**　　　　*P***109**　　　*L***48**　　　# 93

Zimmerman, George　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

"MPDs draw power from the mixing segment" - this statement isn't necessary, and, if the MPD draws power from separate conductors, is not correct.

SuggestedRemedy

Delete sentence. Or, alternatively, change to "MPDs draw power from an attached bus, which, if power and data are on the same conductors, is the mixing segment."

Proposed Response　　　*Response Status*　**O**

Cl **169**　　*SC* **169.4.11.1**　　　*P***110**　　　*L***13**　　　# 84

Zimmerman, George　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

duplicate shalls of what is already in the state diagram (TPS and behavior of removing power)

SuggestedRemedy

Change "TPS shall be defined" to "TPS is defined" (in first sentence of 169.4.11.1), and "Power shall be removed" to "Power is removed" in last sentence of first paragraph of 169.4.11.1

Proposed Response　　　*Response Status*　**O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected　　RESPONSE STATUS: O/open W/written C/closed Z/withdrawn
SORT ORDER: Page, Line

Pa **110**
Li **13**

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Cl **169**　　*SC* **169.5.2**　　　　*P* **110**　　　*L* **31**　　　# 39

Jones, Chad　　　　　　　　　　　Cisco Systems, Inc.

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

floating "|" character. Delete.

SuggestedRemedy

delete "|" just after figure 169-5

Proposed Response　　　　*Response Status* **O**

Cl **169**　　*SC* **169.5.3.2**　　　*P* **110**　　　*L* **48**　　　# 94

Zimmerman, George　　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

There appears to be no V_Mark_th in Table 169-7 or in the state diagram. It is possible that this was meant to be the entry check into the MARK states, which are currently the same as the entry check into the DISCOVERY states (V_Discovery_th)

SuggestedRemedy

Delete V_Mark_th from P110 L45-47

Proposed Response　　　　*Response Status* **O**

Cl **169**　　*SC* **169.5.3.2**　　　*P* **110**　　　*L* **51**　　　# 95

Zimmerman, George　　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

There appears to be no V_Off_MPD in Table 169-8 or the state diagram. It is possible that this was meant to be the condition to exit PON_LOAD_ON… but unlikely since that threshold seems to need to be type-dependent.

SuggestedRemedy

Delete V_Off_MPD from 169.5.3.2 (P110 L51)

Proposed Response　　　　*Response Status* **O**

Cl **169**　　*SC* **169.5.3.3**　　　*P* **111**　　　*L* **52**　　　# 96

Zimmerman, George　　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

V_On_MPD is not a variable, it is a constant, and is already defined and properly used in 169.5.3…

SuggestedRemedy

Delete V_On_MPD from 169.5.3.3 Variables, at P111 L52

Proposed Response　　　　*Response Status* **O**

Cl **169**　　*SC* **169.5.3.3**　　　*P* **111**　　　*L* **54**　　　# 97

Zimmerman, George　　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

There is no definition for pd_max_power as a variable in 169.5.3.3. It is set to value "inrush" in the state diagram at states OFFLINE and IDLE. However, it is never mentioned anywhere else, and it appears that this variable simply should be deleted…

SuggestedRemedy

delete "pd_max_power <= inrush" from states OFFLINE and IDLE in Figure 169-6.

Proposed Response　　　　*Response Status* **O**

Cl **169**　　*SC* **169.5.3.6**　　　*P* **114**　　　*L* **9**　　　# 98

Zimmerman, George　　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

Variable initialization - the state OFFLINE can be entered at any time from mpd_reset or !dte_power_required, so it is important not to rely on variable resets that happen in PON_NO_POWER.
it seems that present_tci_power and present_mismatch_indication need to be reset to FALSE here.

SuggestedRemedy

Add the following to state actions in OFFLINE:
present_tci_power <= FALSE
present_mismatch_indication <= FALSE

Proposed Response　　　　*Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected　　RESPONSE STATUS: O/open W/written C/closed Z/withdrawn
SORT ORDER: Page, Line

Pa **114**
Li **9**

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Cl **169**　　*SC* **169.5.3.6**　　　　*P* **114**　　　*L* **29**　　　# 88

Zimmerman, George　　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

Missing arrowheads at arcs joining in Figure 169-6 and 169-7

SuggestedRemedy

Add arrowheads on arcs joining from the right at P114 L40, P114 L51, P115 L31, P115 L44 and add arrowheads on arcs joining from the left at P114 L41, P115 L24, P115 L36, and P115 L50

Proposed Response　　　　*Response Status*　**O**

Cl **169**　　*SC* **169.5.3.6**　　　　*P* **114**　　　*L* **40**　　　# 40

Jones, Chad　　　　　　　　Cisco Systems, Inc.

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

more state transitions missing arrowheads.

SuggestedRemedy

two transitions to the left edge at line 40 and 51, one transition to the right edge at line 41.

Proposed Response　　　　*Response Status*　**O**

Cl **169**　　*SC* **169.5.3.6**　　　　*P* **115**　　　*L* **24**　　　# 41

Jones, Chad　　　　　　　　Cisco Systems, Inc.

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

more state transitions missing arrowheads.

SuggestedRemedy

two transitions to the left edge at line 33 and 43, three transition to the right edge at line 24, 36, and 50.

Proposed Response　　　　*Response Status*　**O**

Cl **159**　　*SC* **159.5.3.6**　　　　*P* **116**　　　*L* **17**　　　# 67

Zimmerman, George　　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

Conditions out of PON_EVAL are not correct. Left branch and right branches need to always be greater than or equal to V_type0_th, mpd_type = mixed CANNOT be mismatched…, logic gets simpler and non-overlapping.

SuggestedRemedy

Change branches from PON_EVAL as follows (apply subscripts as per state diagram variables):
left branch (correct type, to power on):
$(VMPD \geq Vtype0\_th)$ & (
$((mpd\_type = 1)$ & $(VMPD \geq Vtype1\_th))$ |
$((mpd\_type = 0)$ & $(VMPD < Vtype1\_th))$ |
$(mpd\_type = mixed)$)

Right branch (mismatched):
$(VMPD \geq Vtype0\_th)$ & (
$((mpd\_type = 1)$ & $(VMPD < Vtype1\_th))$ |
$((mpd\_type = 0)$ & $(VMPD \geq Vtype1\_th))$)

Proposed Response　　　　*Response Status*　**O**

Cl **169**　　*SC* **169.5.4**　　　　*P* **117**　　　*L* **11**　　　# 99

Zimmerman, George　　　　　　CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

There is a requirement that "the MPD shall draw I_MPD_mark within T_MPD_discover of entering the state" (for DO_DISCOVERYx states). However, all DO_DISCOVERYx states are entered from DO_MARKn states, which are already already required to draw I_MPD_mark by the first paragraph of 169.5.4 (P116 L52). Do we need this requirement? If so, then at least it should be "continue to draw" so that the reader understands there is no transition required.

SuggestedRemedy

Change ""shall draw I_MPD_mark" to "shall continue to draw I_MPD_mark" at P117 L11

Proposed Response　　　　*Response Status*　**O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general　　　　　*Pa* **117**　　　Page 17 of 19
COMMENT STATUS: D/dispatched A/accepted R/rejected　　RESPONSE STATUS: O/open W/written C/closed Z/withdrawn　　　*Li* **11**　　　7/5/2024 9:08:45 AM
SORT ORDER: Page, Line

Cl **169**   *SC* **169.5.5**   *P***118**   *L***5**   # 100

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

power is drawn from the MPI, not the mixing segement.

SuggestedRemedy

change "mixing segment" to "MPI" in two places - P118 L5, and in 169.5.5.1 at P118 L47

Proposed Response   *Response Status* **O**

Cl **169**   *SC* **169.5.5**   *P***118**   *L***39**   # 42

Jones, Chad   Cisco Systems, Inc.

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

500uA for disable current - this is 22.5mW BEST CASE (45V Vmpse). We require the MPD to actively indicate that it is underpowered. For sure this isn't enough to display a console port message, and not sure it's enough to flash an LED (the two examples given in the text for indication).

SuggestedRemedy

Raise this number. Perhaps we allow 1U for disabled (once we lower the U value to something less than 1 and 2W)? Or make this 5mA to get an order of magnitude more power.

Proposed Response   *Response Status* **O**

Cl **169**   *SC* **169.5.5.3**   *P***119**   *L***33**   # 43

Jones, Chad   Cisco Systems, Inc.

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

sentence ends with two periods.

SuggestedRemedy

delete one period.

Proposed Response   *Response Status* **O**

Cl **169**   *SC* **169.5.5**   *P***119**   *L***36**   # 51

Zimmerman, George   CME Consulting/ADI,APLGp,CSCO,MRVL,ONSmi,So

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

Table 169-9 has the wrong title. It is about the MPD TPS parameters, not the MPSE discovery parameters (which is the title of Table 169-3).

SuggestedRemedy

Change title of Table 169-9 to "MPD Transmit Power Signature (TPS) parameters"

Proposed Response   *Response Status* **O**

Cl **169**   *SC* **169.6.1.1.1**   *P***120**   *L***33**   # 44

Jones, Chad   Cisco Systems, Inc.

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

quotation marks are never closed.
"An impulse test consisting of a 1500 V, 10/700 waveform, applied 10 times, with a 60 s interval between pulses. The shape of the impulses is 10/700 (10 µs virtual front time, 700 µs virtual time to half value), as defined in ITU-T Recommendation K.44.

SuggestedRemedy

close the quote:
"An impulse test consisting of a 1500 V, 10/700 waveform, applied 10 times, with a 60 s interval between pulses. The shape of the impulses is 10/700 (10 µs virtual front time, 700 µs virtual time to half value)", as defined in ITU-T Recommendation K.44.

Proposed Response   *Response Status* **O**

Cl **169**   *SC* **169.6.1.1.2**   *P***120**   *L***51**   # 45

Jones, Chad   Cisco Systems, Inc.

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

quotation marks are never closed.
"An impulse test consisting of a 1500 V, 10/700 waveform, applied 10 times, with a 60 s interval between pulses. The shape of the impulses is 10/700 (10 µs virtual front time, 700 µs virtual time to half value), as defined in ITU-T Recommendation K.44.

SuggestedRemedy

close the quote:
"An impulse test consisting of a 1500 V, 10/700 waveform, applied 10 times, with a 60 s interval between pulses. The shape of the impulses is 10/700 (10 µs virtual front time, 700 µs virtual time to half value)", as defined in ITU-T Recommendation K.44.

Proposed Response   *Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Pa* **120**   Page 18 of 19
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   *Li* **51**   7/5/2024 9:08:45 AM
SORT ORDER: Page, Line

Cl **169**　　*SC* **169.6.1.1.2**　　　　*P* **121**　　　*L* **5**　　　# 46

Jones, Chad　　　　　　　　　Cisco Systems, Inc.

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

spacing for this paragraph is wrong.

SuggestedRemedy

change spacing of the paragraph to single line.

Proposed Response　　　*Response Status* **O**

Cl **169**　　*SC* **169.7.1**　　　　*P* **121**　　　*L* **46**　　　# 47

Jones, Chad　　　　　　　　　Cisco Systems, Inc.

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

appearance of PSE. Should be MPSE. I searched the doc and found this lone occurrence.

SuggestedRemedy

Change PSE to MPSE.

Proposed Response　　　*Response Status* **O**

Cl **169**　　*SC* **169.7.6**　　　　*P* **123**　　　*L* **9**　　　# 48

Jones, Chad　　　　　　　　　Cisco Systems, Inc.

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

"In addition, the system may need to comply with more stringent requirements as agreed upon between customer and supplier, for the limitation of electromagnetic interference."
Not sure why this interoperability standard is talking about agreements between the customer and supplier. This sentence is beyond the scope of an interop standard and should be deleted.

SuggestedRemedy

Delete this sentence.

Proposed Response　　　*Response Status* **O**

Cl **169**　　*SC* **169.7.6**　　　　*P* **123**　　　*L* **20**　　　# 49

Jones, Chad　　　　　　　　　Cisco Systems, Inc.

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

"Exact test setup and test limit values may be adapted to each specific application, subject to agreement between the customer and the supplier."
Not sure why this interoperability standard is talking about agreements between the customer and supplier. This sentence is beyond the scope of an interop standard and should be deleted.

SuggestedRemedy

delete ", subject to agreement between the customer and the supplier"
leaving just: "Exact test setup and test limit values may be adapted to each specific application."

Proposed Response　　　*Response Status* **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected　　RESPONSE STATUS: O/open W/written C/closed Z/withdrawn
SORT ORDER: Page, Line

Pa **123**
Li **20**

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