Cl **33A** *SC* **33A.3** *P* **171** *L* **13** # 1

Zimmerman, George CME Consulting, Inc.

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

"Operation for all types requires that the resistance unbalance shall be 3% or less."
Informative text cannot have requirements - no "shall" or "must" statements.

SuggestedRemedy

Replace "shall" with "should" in the above sentence.

Proposed Response *Response Status* **O**

Cl **33A** *SC* **33A** *P* **171** *L* **1** # 2

Zimmerman, George CME Consulting, Inc.

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

All annexes should be at the end of the book. I understand that they are easier to digest for task force review where they currently are, therefore, at this time I suggest an editorial note reminding the editor to move them before WG ballot.

SuggestedRemedy

Add editorial note immediately prior to Annex 33A:
"Editorial note (to be removed prior to Working Group ballot) - All annexes are to be at the end of the draft. Prior to Working Group ballot, editor should move Clause 79 before Annex 33A in the frame book."

Proposed Response *Response Status* **O**

Cl **33B** *SC* **33B** *P* **173** *L* **1** # 3

Zimmerman, George CME Consulting, Inc.

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

Perhaps we moved too much to the annex. Annex 33B (normative) appears to contain new requirements on PSEs that are not in the main body of Clause 33. The use of normative annexes, per the IEEE style guide is: "for conformance test procedures, tables, or printed source code. Normative annexes may also be used for context-specific applications of the standard."
The key requirement references Equation 33-4b in 3.2.7.4.1, but it seems that Table 33B-1 is a set of additional requirements, perhaps in conflict with the main body of the text.
A lot of what is in this annex appears to be test procedures, but the main requirement seems to be here too, and maybe should be in the body of clause 33.

SuggestedRemedy

Move page 173, lines 16 - 52 ("Equation (33-4b)..." through "attached to PSE PI." to the end of 33.2.7.4.1 page 85, line 17.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.10.1** *P* **119** *L* **19** # 4

Zimmerman, George CME Consulting, Inc.

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

CONFUSION IN Rpair:
"Rpair_max and Rpair_min represents PSE and channel effective source impedance that includes the effect of VPort_PSE_diff as specified by Table 33–11 item 1a."

This is unclear, and possibly in conflict with P85 lines 10-14:
"RPair_max is the maximum PSE common mode effective resistance in the powered pairs of same polarity.
RPair_min is the minimum PSE common mode effective resistance in the powered pairs of same polarity."

Do RPair_min and RPair_max include the channel, or are they just in the PSE? Are they the combination of the PSE and channel? Are they maximum and minimum requirements OVERALL, or are they just the greater and lesser of the two Rpair values in a given installation? (that seems to be the case, but I am not sure).

SuggestedRemedy

Clarify what the definitions of Rpair_max and Rpair_min are. Delete either the definition on page 119 or the definition on page 85, and reference it in the other place.

Proposed Response *Response Status* **O**

Cl **33A** *SC* **33A.5** *P* **172** *L* **10** # 5

Zimmerman, George CME Consulting, Inc.

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

"Rpair_max_PD" and "Rpair_min_PD"
Rpair_max and Rpair_min were defined twice before (pages 107 and 141) in terms of the PSE. This is the only place Rpair_max_PD (or min) occur in the draft. Even though its a guideline, it needs a definition.

SuggestedRemedy

Define Rpair_max_PD, Rpair_min_PD. in 33A.5. (sorry, I really don't know what is the intended definition).

Proposed Response *Response Status* **O**

Cl **25** *SC* **25.1** *P* **1** *L* **1** # 6

Zimmerman, George CME Consulting, Inc.

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

Page numbers jumped back to 1. (this is going to make hell of your comment processing)
Note that there is another jump back to 1 after PDF page 200 (annex 33D start)

SuggestedRemedy

check page numbering parameters in frame file for clause 25, and annex 33D and make them continue from previous document in book.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.9.1.1.4** *P* **7** *L* **1** # 7

Zimmerman, George CME Consulting, Inc.

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

PSE Power Pairs needs updating to 4 pair and new contents of 33.5.1.1.4

SuggestedRemedy

Add enumerated values:
both "PSE Pinouts on both Alternative A and B"
Add sentence on line 12, prior to "If a Clause 22...":
"The enumeration “both” indicates that PSE Pinout uses both Alternatives A and B for detection and power."

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.9.1.1.6** *P* **7** *L* **53** # 8

Zimmerman, George CME Consulting, Inc.

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

Classifications in Clause 30 need updating to include new PD classes

SuggestedRemedy

Add Classes 5 through 8, and Autoclass to the list of enumerated values.
Add editor's note to P8 L5 (after end of paragraph) stating:
"Editor's Note (to be removed prior to Working Group ballot): linkage to management registers to be aligned with resolution of issues on how to report more classes than there are bits available in 802.3-2015 Clause 33 PSE status register."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.5.1.2** *P* **138** *L* **40** # 9

Zimmerman, George CME Consulting, Inc.

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

Need to allocate classes 5 through 8 and autoclass.

SuggestedRemedy

replace "101 Invalid Class" with "101 Class 5"
replace "110 Reserved" with "110 Class 6"
replace "111 Reserved" with "111 Class 7"
add after table - "Editor's Note (to be removed before Working Group ballot) - Status register bits are used up, and clause 22 address space is used up as well. Contributions requested as to how to expand status, at a minimum to report Class 8 PD and Autoclass"

In 33.5.1.2.10, delete P140 L36: "The combinations ‘110’ and ‘111’ for bits 12.6:4 have been reserved for future use."

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.2.1.14** *P* **14** *L* **23** # 10

Zimmerman, George CME Consulting, Inc.

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

"A GET attribute that returns a bit string indicating whether the local system is a PSE or a PD and whether it is Type 1 or Type 2. The first bit indicates Type 1 or Type 2."
Needs to be extended to include types 3 & 4

SuggestedRemedy

Add "Editor's Note (to be removed prior to Working Group Ballot) - Need to extend aLldpXdot3LocPowerType or another variable to manage types 3 and 4."

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.2.1.11** *P* **13** *L* **36** # 11

Zimmerman, George CME Consulting, Inc.

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

30.12.2.1.11 through 30.12.2.1.13,
30.12.2.1.19 through 30.12.2.1.20,
30.12.2.1.22 through 30.12.2.1.33,
30.12.3.1.1 through 30.12.3.1.4,
30.2.3.1.11 through 30.2.3.1.13, and
30.2.3.1.19 through 30.2.3.1.27 are not related to PoE and are not needed in the draft.

SuggestedRemedy

Delete P13 L36 through P14 L14
Delete P16 L28 through P17 L1
Delete P17 L20 through P20 L4
Delete P20 L13 through P21 L7
Delete P22 L17 through P22 L49, and
Delete P25 L1 through P26 L44

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.3** *P* **12** *L* **28** # 12

Zimmerman, George CME Consulting, Inc.

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

Need clause 30.12 header, otherwise Table of contents runs straight from 30.10.2 to 30.12.2.1.5 without heirarchy

SuggestedRemedy

Insert on P34 L28:
30.12 Layer Management for Link Layer Discovery Protocol (LLDP)
30.12.2 LLDP Local System Group managed object class
30.12.2.1 LLDP Local System Group attributes

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.1** *P* **27** *L* **52** # 13

Zimmerman, George CME Consulting, Inc.

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

"c) Compatibility—Clause 33 utilizes the MDIs of 10BASE-T, 100BASE-TX, and 1000BASE-T, without modification.... The clause does not address the operation of 10GBASET. For 10GBASE-T operation, the channel model specified in Clause 55 needs to be met without regard to DTE Power via MDI presence or operation.
d) Simplicity—The powering system described here is no more burdensome on the end users than the requirements of 10BASE-T, 100BASE-TX, or 1000BASE-T."

Needs to be modified to reflect addition of 10GBASE-T.

SuggestedRemedy

change first sentence of item (c) to read: "10BASE-T, 100BASE-TX, 1000BASE-T and 10GBASE-T without modification."
Delete "The clause does not address the operation of 10GBASE-T."
change item (d) to read "10BASE-T, 100BASE-TX, 1000BASE-T, or 10GBASE-T."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.0a** *P* **66** *L* **35** # 14

Zimmerman, George CME Consulting, Inc.

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

"The connection check shall be rerun before applying power if power up fails to meet the timing requirements or power is absent on both pairsets simultaneously after reaching the POWER_UP state."
The timing of this key specification is unclear. how long does power have to be absent for from both pairsets?

'if power up fails to meet the timing requirements' is unclear - which timing requirements, any of them?

SuggestedRemedy

Add 'in Section TBD' after "meet the timing requirements", to reference the timing requirement that needs to be met explicitly by name, table , section, or equation number. (sorry, but its so unclear I don't know which one to point to)

Add 'for at least TBD msec' after 'or power is absent on both pairsets simultaneously after reaching the POWER_UP state."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4** *P* **30** *L* **22** # 15

Zimmerman, George CME Consulting, Inc.

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

Table 33-1, header: R_ch (the underscore denotes subscript)
This parameter appears everywhere else as R_Ch , with the C capitalized. The nomenclature for this is very close to R_Chan, which is the channel max, so it's confusing enough already.

SuggestedRemedy

Make all references to R_ch R_Ch, consistent.
(change Table 33-1 header to R_Ch)

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.2** *P* **76** *L* **10** # 16

Zimmerman, George CME Consulting, Inc.

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

"See Annex 33E for an overview of Multiple Event Physical Layer classification. See Annex 33D for an overview of Multiple-Event physical layer classification."

33D is the table of classification outcomes on type 3 and type 4 PSEs, and 33E is Rload_max and Rload_min

SuggestedRemedy

Delete "See Annex 33E... classification."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **79** *L* **14** # 17

Zimmerman, George CME Consulting, Inc.

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

33.2.7.1 is forest green (an external reference) on item 1 - elsewhere it is a cross reference. Needs to be a live cross reference.

Same goes for 33.2.9 twice, on lines 49 & 52 of page 81 (items 18 & 19 in the table)

SuggestedRemedy

Change references in items 1, 18 & 19 to cross references, and make same color as normal text (remove external tag)

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.2** *P* **83** *L* **24** # 18

Zimmerman, George CME Consulting, Inc.

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

"VPort_PSE-
2P" split across lines

SuggestedRemedy

supress hyphenation breaking this up so it stays on one line.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.4.4** *P* **125** *L* **8** # 19

Zimmerman, George — CME Consulting, Inc.

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

"For 10GBASE-T systems, TBD mV peak, for 1 MHz to 500 MHz."
Need to fill in a number. Initial analysis of 35-40dB common mode to differential mode conversion magnetics suggests that 50mVpp (same as 100 and 1000BASE-T) would be about right. Phy developers are asking to mark with a TBD for now.

SuggestedRemedy

change "TBD mV peak" to "50 mVpp (TBD)"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1** *P* **27** *L* **14** # 20

Jones, Chad — Cisco

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

"This clause uses several terms defined in clause 1.4." I took an action item in Bonita Springs to enumerate these new terms.

SuggestedRemedy

add: " - See terms: 1-Event class signature, 1-Event classification, 1000BASE-T, 10BASE-T/100BASE-TX, 2-Event class signature, 2-Event classification, Dual-signature PD, Endpoint PSE, IPort, Link Section, Midpsan, Midpsan PSE, Midspan PSE, Midspan PSE, pairset, Power Interface (PI), Power Sourcing Equipment (PSE), Powered Device (PD), PSE Group, Single-signature PD, TP-PMD, Twisted Pair Medium Dependent Interface (TP MDI), Type 1 PD, Type 1 PSE, Type 2 PD, Type 2 PSE, Type 3 PD, Type 3 PSE, Type 4 PD, Type 4 PSE., VPD, VPSE

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7.3** *P* **113** *L* **4** # 21

Jones, Chad — Cisco

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

This is a reminder of MR1277 that has been assigned to this TF for closure. Changes were previously made to close the MR and then subsequesntly further changes were made that may backed out the fix. This comment is being filed so that the TF can review the MR and ensure it is being properly addressed and to provide an Editor's Note warning of any future changes to the text.
MR 1277: "RATIONALE FOR REVISION:
PDs in the field turn on their DC-DC load during inrush. This leads to PD cap not charging up fully (even if PD cap is <180uf PSE is following inrush rules from Section 33.2.7.5). This may lead to operational problems after inrush. There is a Voff requirement in PD table 33-18 to ensure power supply remains turned off for V<30V, but customers seem to read this as applicable only "after power on" not during "power on" - hence ether turn on their DC-DC during inrush causing problems.

PROPOSED REVISION TEXT:
Request the following text be added as note to section 33.4.1
Add the following to section 33.3.7.3
"PDs shall not draw more than the maximum current allowed by a PSE during inrush as outlined in section 33.2.7.5" Change 2nd paragraph of Section 33.3.7.1 as follows (change shown in _underline_) "The PD shall _not_ turn on until a voltage _greater_than_Voff_and_less than or equal to Von""

SuggestedRemedy

Restore the text as it stood after D0p4. Also, add an Editor's Note to the end ot the paragraph to be removed before publishing, "Editor's Note: this paragraph has changed as a result of MR1277. Do not change this paragraph without consulting the request of MR1277."

History:
D0p1:"Inrush current is drawn during the startup period beginning with the application of input voltage at the PI
compliant with VPort_PD requirements as defined in Table 33–17, and ending when CPort is charged to 99 % 13 of its final value. This period should be less than TInrush min per Table 33–10."

D0p4: "Inrush current per pair-set is drawn beginning with the application of input voltage at the pair-set compliant with Vport_PD-2P requirements as defined in Table 33–18, and ending before TInrush-2P min per Table 33–11. After TInrush-2P min, the PD shall not exceed its per pair-set current threshold corresponding to its class level."

D1p3:"Inrush current is drawn during the startup period beginning with the application of input voltage at the PI compliant with Vport_PD-2P requirements as defined in Table 33–16a, and ending when CPort has reached a steady state and is charged to 99% of its final value. This period shall be less than TInrush-2P min per Table 33–11. After TInrush-2P min, Class 6 or Class 8 PDs shall meet Pclass at the PSE PI; all other PDs shall meet PClass_PD as specified in Table 33-18."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.8.3.5** *P* **165** *L* **18** # 22

Maguire, Valerie Siemon

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

Not sure if this is in scope, but Category 5 cord requirements do not reside in ANSI/TIA-568-C.2

SuggestedRemedy

Replace "ANSI/TIA-568-C.2" with "ANSI/TIA/EIA-568-A:1995"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.4.9.1.4** *P* **113** *L* **16** # 23

Maguire, Valerie Siemon

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

Not sure if this is in scope, but Category 5 cord requirements do not reside in ANSI/TIA-568-C.2

SuggestedRemedy

Replace "ANSI/TIA-568-C.2" with "ANSI/TIA/EIA-568-A:1995"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.6** *P* **53** *L* **32** # 24

Darshan, Yair Microsemi

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

There are missing parameter in the list of the following text:
"When a PSE powers a PD of lower Type (TypePD) than its own
native type (TypePSE), the PSE shall meet the PI electrical requirements of the PD Type (TypePD), except for ICon, ILIM-2P, IInrush, IInrush-2P, TLIM-2P, and PType (see Table 33-11), for which the PSE shall select to meet the requirements of any Type such that, TypePD <= applied Type <= TypePSE."
The missing parameters is: Icon-2P_unb,

SuggestedRemedy

Change text to:
"When a PSE powers a PD of lower Type (TypePD) than its own
native type (TypePSE), the PSE shall meet the PI electrical requirements of the PD Type (TypePD), except for ICon, Icon-2P_unb, ILIM-2P, IInrush, IInrush-2P, TLIM-2P, and PType (see Table 33-11), for which the PSE shall select to meet the requirements of any Type such that, TypePD <= applied Type <= TypePSE."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **80** *L* **15** # 25

Darshan, Yair Microsemi

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

Table 33-11 item 7, Additional Information K_Icut values need to be updated due to the following changes made for D1.2:
1. Increasing PSE Vdiff to 10mV instead of 2mV.
In addition, the following changes we made for Type 3 system:
2. Increasing system Vdiff for Type 3 to 70mV instead of 60mV to increase margins.
3. Type 4 systems stayed total 60mV vdiff:

SuggestedRemedy

Update Table 33-11 item 7, K_Icut values per darshan_01_1015.pdf page 4.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4** *P* **30** *L* **46** # 26

Darshan, Yair Microsemi

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

There is no need for the Editor Note regarding the effect of extended power.

SuggestedRemedy

Remove the Editor Note

Proposed Response *Response Status* **O**

Cl **33** *SC* **3.4.9** *P* **129** *L* **1** # 27

Darshan, Yair Microsemi

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

Type 4 was adressed.
We can remove the editor note.

SuggestedRemedy

Remove the Editor Note.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.5** *P* **85** *L* **52** # 28

Darshan, Yair Microsemi

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

The text:
A Type 2 PSE that uses 1-EventSingle-Event Physical Layer classification, and requires the 1 ms settling time, shall power up a cClass 4 PD as if it used 2Multiple-Event Physical Layer classification.

It is not clear why this text should be part of the POWER_UP and not part of classification.

SuggestedRemedy

Move this text to classifiaction section or clarify why it is inserted here.

Proposed Response *Response Status* **O**

Cl **33** *SC* *P* **46** *L* **12** # 29

Darshan, Yair Microsemi

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

The text "Type 3 and Type 4 PSEs shall use this value."
The legacy powerup was canceled for Type 3 and 4.
In order to keep interoperability between Type 3 systems that operate 4P and those who operate 2P it is better to delete the use of legacy powerup to Type 4 only.

SuggestedRemedy

Change from:
"Type 3 and Type 4 PSEs shall use this value."
To:
"Type 4PSEs shall use this value."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **79** *L* **37** # 30

Darshan, Yair Microsemi

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

Table 33-11 item 4a, Icon-2P_unb need to be updated due to the following changes made for D1.2:
1. Increasing PSE Vdiff to 10mV instead of 2mV.
In addition, the following changes we made for Type 3 system:
2. Increasing system Vdiff for Type 3 to 70mV instead of 60mV to increase margins.
3. Type 4 systems stayed total 60mV vdiff:

SuggestedRemedy

Update Table 33-11 item 4a per darshan_01_1015.pdf page 3.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **80** *L* **28** # 31

Darshan, Yair Microsemi

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

Table 33-11 item 9, ILIM-2P need to be updated due to the following changes made for D1.2:
1. Increasing PSE Vdiff to 10mV instead of 2mV.
In addition, the following changes we made for Type 3 system:
2. Increasing system Vdiff for Type 3 to 70mV instead of 60mV to increase margins.
3. Type 4 systems stayed total 60mV vdiff:

SuggestedRemedy

Update Table 33-11 item 7 per darshan_01_1015.pdf page 5.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.4.1** *P* **85** *L* **2** # 32

Darshan, Yair Microsemi

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

Updating Equation 33-4b (PSE PI spec.) due to the following changes made for D1.2:
1. Increasing PSE Vdiff to 10mV instead of 2mV.
In addition, the following changes we made for Type 3 system:
2. Increasing system Vdiff for Type 3 to 70mV instead of 60mV to increase margins.
3. Type 4 systems stayed total 60mV vdiff:

SuggestedRemedy

Update Equation 33-4b per darshan_01_1015.pdf page 6.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.4** *P* **84** *L* **25** # 33

Darshan, Yair Microsemi

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

Updating Equation 33-4a (The Kipeak equation) due to the following changes made for D1.2:
1. Increasing PSE Vdiff to 10mV instead of 2mV.
In addition, the following changes we made for Type 3 system:
2. Increasing system Vdiff for Type 3 to 70mV instead of 60mV to increase margins.
3. Type 4 systems stayed total 60mV vdiff:

SuggestedRemedy

Update Equation 33-4a per darshan_01_1015.pdf page 7.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33A.5** *P* **172** *L* **10** # 34

Darshan, Yair Microsemi

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

Updating Annex 33A.5 due to the following changes made for D1.2:
1. Increasing PSE Vdiff to 10mV instead of 2mV.
In addition, the following changes we made for Type 3 system:
2. Increasing system Vdiff for Type 3 to 70mV instead of 60mV to increase margins.
3. Type 4 systems stayed total 60mV vdiff:

SuggestedRemedy

Update Annex 33A.5 per darshan_01_1015.pdf page 9.

Proposed Response *Response Status* **O**

Cl **33** *SC* **Annex 33B** *P* **173** *L* **43** # 35

Darshan, Yair Microsemi

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

Updating Annex 33B Table 33B-1 due to the following changes made for D1.2:
1. Increasing PSE Vdiff to 10mV instead of 2mV.
In addition, the following changes we made for Type 3 system:
2. Increasing system Vdiff for Type 3 to 70mV instead of 60mV to increase margins.
3. Type 4 systems stayed total 60mV vdiff:

SuggestedRemedy

Update Table 33B-1 per darshan_01_1015.pdf page 10.

Proposed Response *Response Status* **O**

Cl **33** *SC* **3.2.7** *P* **81** *L* **21** # 36
Darshan, Yair Microsemi

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

Table 33-11 item 14, Turn on rise time need to be per pairset.

SuggestedRemedy

Change "Turn on rise time" to "Turn on rise time per pairset".

Proposed Response *Response Status* **O**

Cl **33** *SC* **3.2.7** *P* **81** *L* **25** # 37
Darshan, Yair Microsemi

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

Table 33-11 item 15, Turn off time need to be per pairset.

SuggestedRemedy

Change "Turn off time" to "Turn off time per pairset".

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **82** *L* **19** # 38
Darshan, Yair Microsemi

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

Table 33-11 item 23, Detection Timing, additional information:
The time to complete detection of a PD is per a pairset or supply a reference for how to treat completion of detection for SS and DS PDs.

SuggestedRemedy

Change from: "Time to complete detection of a PD"
To : "The per pairset time to complete detection of a PD"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **82** *L* **23** # 39
Darshan, Yair Microsemi

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

Table 33-11 item 24, Error delay Timing, additional information:
The time to is per pairset.

SuggestedRemedy

Change from:
"Delay before PSE may attempt subsequent powering after power removal because of error condition."
To:
"The per pairset delay before PSE may attempt subsequent powering after power removal because of error condition."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **82** *L* **33** # 40
Darshan, Yair Microsemi

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

Editor Note #1 can be removed.

SuggestedRemedy

Remove "1. PSE Vdiff is still under investigation. It may be changed."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7.10.1** *P* **119** *L* **17** # 41
Darshan, Yair Microsemi

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

The title of figure 33-18a is incorrect.

SuggestedRemedy

Change from "Figure 33–18a—PI fault tolerance test circuit"
To: "Figure 33–18a—PD PI pair-to-pair test circuit"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.4.4** *P* **125** *L* **8** # 42

Darshan, Yair Microsemi

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

Replace TBD with:
50 mV peak from 1MHz to 100MHz and 20 mV peak from > 1MHz and up to 500MHz.

SuggestedRemedy

Replace TBD with:
50 mV peak from 1MHz to 100MHz and 20 mV peak from > 100MHz and up to 500MHz.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **79** *L* **49** # 43

Darshan, Yair Microsemi

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

Table 33-11 item 5.
Only PSE Type 1 and 2 should support Inrush=0.4A min to Type 1 and 2 PDs.
We should not force Type 3 and 4 PSEs to meet this requirement as well due to the fact that PD type 1 and 2 need to meet much higher currents than 0.9A.
Rationale:
a) It could be a feature and not mandatory requirements.
b) System vendors cannot be liable for poorly designed PDs or non-compliant PDs.
See darshan_02_1015.pdf for details.

SuggestedRemedy

In Table 33-11 item 5, restore PSE Type as 1,2 and delete "all"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.2** *P* **77** *L* **51** # 44

Darshan, Yair Microsemi

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

Table 33-10 item 13 TCLE 3 max value needs more margin.
Increase it to 20msec.

SuggestedRemedy

Increase TCLE 3 max value to 20msec.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **80** *L* **7** # 45

Darshan, Yair Microsemi

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

Table 33-11 item 5a.
PSE Types 3 and 4 can support all PDs and not only Type 3 and 4 PDs.
Compliant PDs should stand more than 0.4A per pair set or total 0.9A.
System vendors cannot be liable for poorly designed PDs or non-compliant PDs.
See darshan_02_1015.pdf for details.

SuggestedRemedy

In Table 33-11 item 5a: In the additional information:
Delete "For Type 3 and 4 PDs" or replace with "For all PDs".

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **79** *L* **37** # 46

Darshan, Yair Microsemi

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

Table 33-11 item 4a.
Icon-2P_unb is equal to Icut-2P minimum at its worst case conditions (at Vport_PSE minmum and worst case Rch in terms of E2EP2PRub).
Therefore for increasing design flexibility, we can specify Icon-2P_unb as a fixed value as it is done currently or as a function of KIcut*Pclass/Vport_PSE-2P which is equal to Icut-2P min in similar concept used in 802.3at with the addition of Kicut factor to account for E2EP2PRunb.
See details in darashan_01_1015.pdf page 16.

SuggestedRemedy

See two options for remedy in darashan_01_1015.pdf page 16.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.5** *P* **85** *L* **40** # 47

Darshan, Yair Microsemi

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

We need to allow A Type 3 or Type 4 PSE that is connected to a Class 0-4 single-signature PD and is in the POWER_UP state to transition between 2-pair and 4-pair power at any time, including after the expiration of Tinrush-2P.

SuggestedRemedy

Add the following text after line 40 in page 85:
A Type 3 or Type 4 PSE that is connected to a Class 0-4 single-signature PD and is in the POWER_UP state may transition between 2-pair and 4-pair power at any time, including after the expiration of Tinrush-2P.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.4** *P* **83** *L* **46** # 48

Darshan, Yair Microsemi

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

See darshan_03_1015.pdf for details.
The Icon-TBD need to be replaced with Icon-2P_unb.
Rationale:
DS PDs can have unbalance too in the positive pairs, in the negative pairs, or both.
There is no way to know if it is single load or dual load unless the dual load present different class signature. In this case, no need to meet Icon-2P_unb

SuggestedRemedy

Change from:
"PSEs connected to a single-signature PD shall meet Icon and Icon-2P_unb as specified in Table 33-11. PSEs connected to a dual-signature PD shall meet Icon-TBD on each pairset as specified in Table 33-11."
To:
"PSEs connected to a single-signature PD shall meet Icon and Icon-2P_unb as specified in Table 33-11.
PSEs connected to a dual-signature PD with the same class over each pairset shall meet Icon-2P_unb on each pairset as specified in Table 33-11.
PSEs connected to a dual-signature PD with a different class signature over each pairset are not required to meet Icon-2P_unb.
PSEs connected to an isolated dual-signature PD are not required to meet Icon-2P_unb."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.5** *P* **85** *L* **51** # 49

Darshan, Yair Microsemi

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

The text:
"For Type 1 PSE, measurement of minimum IInrush-2P requirement to be taken after 1 ms to allow startup transients."
Is correct for all PSE types and not only Type 1 PSE.

SuggestedRemedy

Change from:
"For Type 1 PSE, measurement of minimum IInrush-2P requirement to be taken after 1 ms to allow startup transients."
To:
"For all PSE types, measurement of minimum IInrush-2P requirement to be taken after 1 ms to allow startup transients."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.7** *P* **87** *L* **12** # 50

Darshan, Yair Microsemi

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

The text in lines 12-14:
"When connected to a single signature PD, a Type 3 or Type 4 PSE should (TBD) remove power from both pairsets before the current exceeds the "PSE upperbound template" on either pairset."
is redundant.
The requirement is already covered by previous lines lines 10-12:
Power shall be removed from a pairset PI of a PSE before the pairset PI current exceeds the “PSE upperbound template” in Figure 33–
14, Figure 33–14a, and Figure 33–14b.

SuggestedRemedy

Remove the text:
"When connected to a single signature PD, a Type 3 or Type 4 PSE should (TBD) remove power from both pairsets before the current exceeds the "PSE upperbound template" on either pairset."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.7** *P* **87** *L* **12** # 51

Darshan, Yair Microsemi

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

The text in lines 12-14:
"When connected to a single signature PD, a Type 3 or Type 4 PSE should (TBD) remove power from both pairsets before the current exceeds the "PSE upperbound template" on either pairset."

When PD gets to this situation it is already damaged so it is irelevant if it takes TLIM or 2xTLIM to remove power.

SuggestedRemedy

Remove the text:
"When connected to a single signature PD, a Type 3 or Type 4 PSE should (TBD) remove power from both pairsets before the current exceeds the "PSE upperbound template" on either pairset."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.7** *P* **87** *L* **12** # 52

Darshan, Yair Microsemi

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

The text in lines 12-14:
"When connected to a single signature PD, a Type 3 or Type 4 PSE should (TBD) remove power from both pairsets before the current exceeds the "PSE upperbound template" on either pairset."

If power is removed from the first pair set, then all the current is going through one pair set and then power will be removed from that pair set too.
This is alredy covered by the lines 10-12 therefore lines 12-14 is redundant.

SuggestedRemedy

Remove the text:
"When connected to a single signature PD, a Type 3 or Type 4 PSE should (TBD) remove power from both pairsets before the current exceeds the "PSE upperbound template" on either pairset."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5.3** *P* **108** *L* **4952** # 53

Darshan, Yair Microsemi

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

The following text is not clear:
"A PD implementing Autoclass shall remove its classification current at TACS (as defined in Table 33–17a), resulting in a classification signature of ‘0’ for the remainder of CLASS_EV1. A PD implementing Autoclass carries out the rest of the Physical Layer classification as defined in section 33.3.5.1 or 33.3.5.2."

1. It says that the PD shall remove its classification current at TACS (table 33-17a) = 75.5msec to 87.5ms which is identical to the Long First Class event timiming TLCF_PD=75.5msec to 87.5msec (Table 33–17) resulting in a classification signature of ‘0’ for FOR THE WHOLE periode of the class event and not only for the remainder of CLASS_EV1.
So the "remiander of CLASS_EV1" is incorrect to use. If TACS WAS < TLCF_PD than it was OK.

The text:
"A PD implementing Autoclass carries out the rest of the Physical
Layer classification as defined in section 33.3.5.1 or 33.3.5.2." may need further clarrification by saying:
"A PD implementing Autoclass carries out the rest of the Physical
Layer classification (**the PD class response to the 2nd or more class events**) as defined in section 33.3.5.1 or 33.3.5.2."

SuggestedRemedy

Group to clarify the questions of adopt the following remedy:
"A PD implementing Autoclass shall remove its classification current at TACS (as defined in Table 33–17a), resulting in a classification signature of ‘0’ for the (Delete "remainder" **duration** of CLASS_EV1).
A PD implementing Autoclass carries out the rest of the Physical
Layer classification **(the PD class response to rest of class events)** as defined in section 33.3.5.1 or 33.3.5.2."

Note: I am aware of the fact that it takes time to PD to remove class current so the time left with class 0 is less tnan CLASS_EV1 so "remainder" may be OK to use but the whole thing is not so clear (what to do with the time when it is not class 0? etc.) but this is the best what I could suggest to start a discussion.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **85** *L* **17** # 54

Darshan, Yair Microsemi

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

Adressing the editor note # 3 in page 82 lines 39-40 by adding text in page 85 after line 17.
We need to adress the case when PSE is using active or passive pair to pair current balancing. It will affect the minimum requirements for Icon-2P_unb, Icut-2P and ILIM-2P only for the pairs were the current is sensed.

SuggestedRemedy

Add the following text in page 85 line 17:
PSEs that use active or passive pair to pair current or resistance balancing over the pairs were the current is sensed may optionally use lower Icon-2P_unb, Icut-2P and ILIM-2P per the following equation TBD.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.7** *P* **88** *L* **11** # 55

Darshan, Yair Microsemi

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

1. Figure 33-14a on Iport-2P axis:
To update the constant 0.8A/TBD to 0.9A for better margin.
2. Figure 33-14a on Iport axis:
To update the 1.6A/TBD to (60W/50V)*1.15=1.38A ==> 1.4A
(The total current doesnt include unbalance so there is no need for twice the value of Iport-2P.)
3. Page 89 line 19 equation 33-6a: To change from 0.8A to 0.9A

SuggestedRemedy

1. Figure 33-14a on Iport-2P axis:
To update the constant 0.8A/TBD to 0.9A for better margin.
2. Figure 33-14a on Iport axis:
To update the 1.6A/TBD to 1.4A
3. Page 89 line 19 equation 33-6a: To change from 0.8A to 0.9A

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.7** *P* **88** *L* **13** # 56

Darshan, Yair Microsemi

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

Figure 33-14a line 13 and Figure 33-14b line 41:
As a greed in last meeting, we need to change the min equation and replace it with Icon-2P = Icon - Iport-2P-Other. We can also add in the baseline text that the max value of Icon-2P is Icon-2P_unb.

SuggestedRemedy

Make the following changes in Figure 33-14b:
1. Replace "min(Icon-Iport-2P_other, Icon-2P_unb) with Icon-2P.
In the baseline text specify:
Icon-2P=Icon-Iport-2P_other or min(Icon-Iport-2P_other, Icon-2P_unb).
See good example in Lennart's presentation.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **46** *L* **32** # 57

Darshan, Yair Microsemi

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

Missing mr_pse_alternative A + B(x) in the following text and also we need to correct it while keeping old text unchanged:
"mr_pse_alternative
This variable indicates which Pinout Alternative the PSE uses to apply power to the link (see Table 33¡V2). This variable is provided by a management interface that may be mapped to the PSE Control register Pair Control bits (11.3:2) or other equivalent function.
Values:A: The PSE uses PSE pinout Alternative A.
B: The PSE uses PSE pinout Alternative B.
BOTH: The PSE uses both Alternative A and Alternative B."

SuggestedRemedy

Change from"
"mr_pse_alternative
This variable indicates which Pinout Alternative the PSE uses to apply power to the link (see Table 33¡V2). This variable is provided by a management interface that may be mapped to the PSE Control register Pair Control bits (11.3:2) or other equivalent function.
Values:
A: The PSE uses PSE pinout Alternative A.
B: The PSE uses PSE pinout Alternative B.
BOTH: The PSE uses both Alternative A and Alternative B."

To:
"mr_pse_alternative
This variable indicates which Pinout Alternative the PSE uses to apply power to the link (see Table 33¡V2). This variable is provided by a management interface that may be mapped to the PSE Control register Pair Control bits (11.3:2) or other equivalent function.
Values:
A: The PSE uses PSE pinout Alternative A.
B: The PSE uses PSE pinout Alternative B.
BOTH1: The PSE uses both Alternative A and Alternative B.
BOTH2: The PSE uses both Alternative A and Alternative B(x)."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.1** *P* **42** *L* **7** # 58

Darshan, Yair Microsemi

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

The text "Detection, classification, and power turn-on timing shall meet the specifications in Table 33–4, Table 33–10, and Table 33–11."
Need to be updated to include more tables with timing information.

SuggestedRemedy

Change ""Detection, classification, and power turn-on timing shall meet the specifications in Table 33–4, Table 33–10, and Table 33–11."
To:
"Connection Check, Detection, classification, and power turn-on timing shall meet the specifications in Table 33-3a, Table 33–4, Table 33–10, Table 33-10a and Table 33–11."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **44** *L* **6** # 59

Darshan, Yair Microsemi

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

The variable PD_4pair_can in page 44 line 6 and PD_4pair_candidate in page 45 line 10:

Not clear they are two separate variables or different variables (the name is different and some of the content).
1. Clarify the intent.
2. The variable PD_4pair_can is for Type 3 and Type 4 only since Type 1 and 2 will work only with 2P.
3. the variable PD_4pair_candidate is for Type 3 and 4 so I guess it is the correct variable.
4. In the text of PD_4pair_candidate on page 45 lines 11-15 we need to use the term "on both modes" instead of "both pairsets" if we want to keep consistency with PD side terminology.

SuggestedRemedy

Clarify the use of the two variables or adopt the following remedy:
1. Delete PD_4pair_can in page 44 lines 6 -11.
2. Change from "on both pairsets" on page 45 lines 14 and 15 (two locations) to: "on both modes"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.7** *P* **87** *L* **37** # 60

Darshan, Yair Microsemi

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

Figure 33-14 title is incorrect.
See details in updated Figure 33-14/a/b/c in page 6 of darshan_04_1915.pdf.

SuggestedRemedy

Replace:
Figure 33–14—POWER_ON state, per pairset operating current templates for PSEs that operate in 2-pair mode, Type 3 and Type 4 dual-signature PSEs

With:
Figure 33–14—POWER_ON state, operating current templates for Type 1 and Type 2 PSEs or Type 3 and Type 4 PSEs that operate in 2-pair mode.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **45** *L* **50** # 61

Darshan, Yair Microsemi

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

The definition of Iport-2P_other is incorrect.
See details in updated Figure 33-14/a/b/c in page 5 of darshan_04_1915.pdf.

SuggestedRemedy

Change "Iport-2P-other
Output current on the other pairset, defined as IPort-2P-other = IPort - IPort-2P."
To:
Iport-2P-other
Output current on the other pairset, defined as IPort-2P-other = IPort - IPort-2P. Iport-2P and Iport-2P-other are pairs of the same polarity.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **46** *L* **52** # 62

Darshan, Yair Microsemi

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

The variable option_vport_lim need to be used in the Type 3 and 4 state machine.

SuggestedRemedy

Clarify where it is being used in Type 3 and 4 state machine.
If not used: Add Editor Note: Editor Note: option_vport_lim need to be used in Type 3 and 4 state machine in the same way it was used in Type 1 and 2.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **49** *L* **10** # 63

Darshan, Yair Microsemi

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

It is not clear if Table 33-3 is about possible maximum class_num_events
E.g. Type 3 can use only max of 1,2 or 4 and it may use 3 events.
Or Table 33-3 tells that for type 3 we can use only 1,2 and 4.

SuggestedRemedy

Group to clarify the intent.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.6** *P* **51** *L* **23** # 64

Darshan, Yair Microsemi

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

In the text:
"When a PD requests a higher Class than a Type 3 or Type 4 PSE can support, the PSE assigns the PD Class 3, 4, or 6, whichever is the highest that it can support."

It is not clear why PSE can't assigns the PD Class 3, 4, 5 or 6, whichever is the highest and only assigns the PD Class 3, 4, 5 or 6 as currently stated.

SuggestedRemedy

Change to:

"When a PD requests a higher Class than a Type 3 or Type 4 PSE can support, the PSE assigns the PD Class 3, 4, **5** or 6, whichever is the highest that it can support."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.6** *P* **51** *L* **37** # 65

Darshan, Yair Microsemi

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

Adressing dual signature class codes by limiting DS PDs to up to value 4 (class 5).

SuggestedRemedy

Replace the editor note with the following text:
Dual signature PDs is limited to use up to value 4 (class 5) per pairset.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.6** *P* **51** *L* **40** # 66

Darshan, Yair Microsemi

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

The mr_pd_class_detected is variable or function?
It looks like variable and not belongs to the functions section.
Is it part of the functio do_classification?
In addition, there are missing values for class 5-8 or it is shown in other place?

SuggestedRemedy

Clarify if mr_pd_class_detected is part of do_classification. If YES than move mr_pd_class_detected to be alligned with the other functio noutputs. If NO than use the following remedy:
1. Move mr_pd_class_detected to section 33.2.4.4
Clarify where class 5-8 is used in mr_pd_class_detected or follow the suggested remedy:
2. add values for class 5-8.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.4** *P* **55** *L* **1** # 67

Darshan, Yair Microsemi

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

Figure 33-9 is Type 1 and 2 state diagram.
We agree that for Type 3 and 4 we will generate new state machine and we live Type 1 and 2 state machine as it is in IEEE802.3-2012 version.

SuggestedRemedy

To verify with Dan Dove if it was changed.
If Yes, to restore to the IEEE802.3-2012 version we will not have to spend time to review it.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.3** *P* **78** *L* **7** # 68

Johnson, Peter Sifos Technologies

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

"Please see" seems like unusual language for a standard.

Engineers usually aren't that polite.

SuggestedRemedy

Replace "Please see" with just "See".

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.5** *P* **86** *L* **24** # 69

Johnson, Peter Sifos Technologies

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

"Figure 33-13 - Iinrush-2P current..." figure description is missing a reference to Inrush from Table 33-11, item 5.

SuggestedRemedy

Re-title this to "Figure 33-13- Iinrush and Iinrush-2p current..."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5.2** *P* **107** *L* **7** # 70

Johnson, Peter Sifos Technologies

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

Per earlier comment to D1.2, I still see the state variable names "class_sig_A" and "class_sig_B" as asking for trouble and creating confusion with Dual-Signature PD classification.

Prior response was AIP but needing a better substitute.

SuggestedRemedy

Solution 1:
Change 'class_sig_A' to 'class_sig_init'
Change 'class_sig_B' to 'class_sig_final'

Solution 2 (picture the 2 and 3 events?):
Change 'class_sig_A' to 'class_sig_U'
Change 'class_sig_B' to 'class_sig_W'

Solution 3:
Change 'class_sig_A' to 'class_sig_m'
Change 'class_sig_B' to 'class_sig_n'

Change will require search and replace over 33.3 portions of document.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5.3** *P* **108** *L* **47** # 71

Johnson, Peter Sifos Technologies

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

Another "Please see"....

Engineers aren't that polite.

SuggestedRemedy

Replace "Please see.." with "See...".

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.58.3** *P* **108** *L* **49** # 72

Johnson, Peter Sifos Technologies

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

The phrase "A PD implementing Autoclass shall remove its classification current at Tacs (as defined in Table 33-17a), resulting in a classification signature of '0' for the remainder of CLASS_EV1." suggests 0mA class signature. This is inconsistent with 33.2.6.2 where it states "....Iclass in the range of Class 0 after Tacs...".

So what is the actual requirement ? Class 0 or 0 mA ? (note this does have a 'shall' in it...)

Also, this requirement only has meaning if CLASS_EV1 is an LCF. In the PSE State Diagram, that state is now CLASS_EV1_LCF. We should stipulate that this only happens given Type 3 or Type 4 PSE.

SuggestedRemedy

Alter the phrase to:

"When connected to a Type3 or Type 4 PSE, a PD implementing Autoclass shall present a Class 0 signature starting at Tacs (as defined in Table 33-17a) for the remainder of CLASS_EV1_LCF."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5.3** *P* **109** *L* **1** # 73

Johnson, Peter — Sifos Technologies

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

Current text is:

"After power up, a PD implementing Autoclass shall draw its highest required power throughout the period bounded by ..."

So what happens when a Type 3 or Type 4 PSE cannot support Pclass_pd for this PD? Full loading by the PD during Autoclass will lead to power cycling with the PSE. Either the PD must restrict Autoclass load to its maximum power requirement GIVEN any particular power grant from the PSE (e.g. 13W, 25.5W, etc) or the Autoclass process needs to somehow abort.

SuggestedRemedy

Assuming the solution is that PD's must restrict Autoclass loads to PD's maximum power requirement *GIVEN* any particular power grant from the PSE:

"After power up, a PD implementing Autoclass shall draw its highest required power, in accordance with the pse_power_level resolved during classification, throughout the period bounded by ...."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **79** *L* **33** # 74

Johnson, Peter — Sifos Technologies

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

Icon in Table 33-11, item 4, is defined as the "Continuous total output current capability in POWER_ON state". The minimum value is then expressed as Pclass/Vport_pse_2p. This then requires that Pclass is the total power furnished by a PSE to a PD.

In draft 1.3, paragraph 33.2.6 added (p. 70, line 52) "For Type 3/DS and Type 4/DS PDs, Pclass applies to each pairset independently." This statement is also a problem with regard to the description of the Pclass equation where it says "...or Rchan = Rch/2 when powering using tow pairsets...".

These elements are contradictory and must be reconciled.

SuggestedRemedy

This may be a smaller piece of a bigger issue relating to Dual Signature PD's and whether those PD's generally constitute dual independent loads that are policed per pairset or without concern for pair-pair unbalance. Or if they are shared load devices where pair-pair unbalance interfers with policing per pairset.

I am not proposing a solution at this point for fear that this is not an easy fix until more funatmental issues about dual signature PD's are resolved.

If nothing else, an editors comment adjacent to Table 33-11 indicating that Icon and Pclass as used in Table 33-11 are not presently consistent with the handling of Dual Signature PD's.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.0a** *P* **32** *L* **47** # 75

Johnson, Peter — Sifos Technologies

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

In Table 33-1a, under "Supports 4-pair power", the phrase "Allowed" is used to say that Type-3, Class 3&4 PSE's may provide 2 or 4 pair power. This is not typical terminology for tables in the standard.

SuggestedRemedy

Replace "Allowed" with "Optional".

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.1** *P* **42** *L* **23** # 76

Johnson, Peter — Sifos Technologies

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

"If a PSE perorms detection using Alternative B (see 33.2.5.5...)" is a wierd phrase. Suggest replacing this.

SuggestedRemedy

Eliminate text up to and including parenthesis and just say:

"See 33.2.5.5 for more information on Alternative B detection backoff requirements."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.5** *P* **70** *L* **14** # 77

Johnson, Peter — Sifos Technologies

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

33.2.5.5 was referenced with regard to PSE's that perform detection using "only Alternative B..." (See 33.2.4.1) So to be consistent, suggest specifying "only Alternative B" here as well.

SuggestedRemedy

"If a PSE that is performing detectin using only Alternative B (see 33.2.3)..."

This way, there is no confusion with 4-pair detection cases.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6** *P* **71** *L* **22** # 78

Johnson, Peter — Sifos Technologies

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

Equation 33-3 was moved to its proper place relative to text, however, the variable descriptions for Eq. 33-3 were not moved.

SuggestedRemedy

Move variable descriptions "where ... Vpse ..." to just below Equation 33-3.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6** *P* **72** *L* **7** # 79

Johnson, Peter — Sifos Technologies

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

"NOTE 1 ..." pertains specifically to Pclass in header of column 3 of Table 33-7. This should be communincated.

SuggestedRemedy

Follow "(Pclass)" in column 3 heading with either footnote "1" or "see NOTE 1".

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6** *P* **73** *L* **37** # 80

Johnson, Peter — Sifos Technologies

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

Regarding Type-1 PSE classification with single event: "Valid classification results are Classes 0 up to and including 4, as listed in Table 33-7."

This phrase seems awkward in light of current structure of Table 33-7 where there are now Classes 0-8 and Class 4 row indicates "2 or 3" events. This is mostly non-normative, old text and it might be more accurate if it referenced Table 33-9 instead of Table 33-7. One possible solution is proposed here.

SuggestedRemedy

Modify to:

"...Single-Event Physical Layer classification. Valid classification results include Classes 0, 1, 2, 3, or 4 as listed in Table 33-9. A Type-1 PSE detecting Class 4 assigns that PD to Class 0. If a Type-1 PSE does not...."

The normative text for Type-1 PSE treatment of class 4 already exists in 33.2.6.1.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.2** *P* **74** *L* **33** # 81
Johnson, Peter Sifos Technologies

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

Paragraph ends with "- as defined in the state diagram in Figure 33-9".

Ultimately, reference could be to different or additional state diagram(s).

SuggestedRemedy

Editor Note: "Update Figure reference when state diagrams are completed."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.1** *P* **74** *L* **37** # 82
Johnson, Peter Sifos Technologies

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

Missing space between "5" and "Class".

SuggestedRemedy

Change to "... maximum of 5 Class and 5 mark events."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.2** *P* **75** *L* **22** # 83
Johnson, Peter Sifos Technologies

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

The phrase "PSEs that implement CLASS_EV1_LCF, when connected..." is a description of state machine behavior squeezed between other paragraphs that are describing electrical characteristics.

Also, "PSEs that implement CLASS_EV1_LCF" is a wordy way of saying "Type 3 and 4 PSEs".

SuggestedRemedy

Move this sentence down by 2 or 3 paragraphs to present line 40 (just before "If the result of the first Class...".

Change "PSEs that implement CLASS_EV1_LCF" to "Type 3 and Type 4 PSEs".

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.2** *P* **75** *L* **52** # 84
Johnson, Peter Sifos Technologies

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

"...detected during CLASS_EVE1_LCF is a 0, a Type 3 or Type 4 PSE treats a dual-signature PD as a Type 1 PD and shall omit the subsequent mark and Class events and classify the PD according to the result of the first Class event."

Since we know the first class event is 0, save some words.

SuggestedRemedy

Change to:

"....detected during CLASS_EVE1_LCF is a 0, a Type 3 or Type 4 PSE treats a dual-signature PD as a Type 1 PD and shall omit the subsequent mark and Class events and classify the PD as Class 0."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.2** *P* **76** *L* **7** # 85
Johnson, Peter Sifos Technologies

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

"... The PSE shall classify the PD only once. Classification..."

Once for all time ? (there is a "shall" here...)

Also, the first half of this paragraph seems to apply to Single-Signature PD's. Suggest splitting this into two paragraphs.

Finally, the 2nd to last sentence "See Annex 33E..." needs to go - the following sentence "See Annex 33D..." is the one that belongs.

SuggestedRemedy

Modify to:

"... The PSE shall classify the PD only once following successful detection. Classification..."

Start new paragraph with "A Type 3 or Type 4 PSE connected to a dual-signature PD shall skip...."

Remove 2nd to last sentence starting with "See Annex 33E...".

Proposed Response *Response Status* **O**

Cl **79** *SC* **79.3.2** *P* **9** *L* **53** # 86

Skinner, John Sifos Technologies, In

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

In Figure 79-3-Power Via MDI TLV format, the TLV information string length field states "TLV information string length = 14". This does not account for the additional fields "PD measurements" and "PSE Measurements", which are each 4 octets in length (therefore 8 octets total).

SuggestedRemedy

Correct the TLV information string length in Figure 79-3-Power Via MDI TLV format to indicate "...length = 22".

Proposed Response *Response Status* **O**

Cl **79** *SC* **79.3.2** *P* **9** *L* **27** # 87

Skinner, John Sifos Technologies, In

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

Draft P802.3/D1.3 contains a modified Figure 79-3-Power Via MDI TLV format. This same figure designation was used in the 802.3at specification to define the Power Via MDI TLV format. Modifying Figure 79-3 is invalid, as it would therefore modify the specification of how the Power Via MDI TLV (in use today by Type 2 PSEs and PDs that conform to 802.3at)is formatted.

(There should be no expectation that existing parsers will recognize the new format, as the length field is the ONLY distinguishing characteristic that is now used to determine whether the received TLV is the old form defined by 802.1AB or the new form defined by 802.3at. This new form will indicate a different length, forcing newer parsers to handle 3 possible formats...).

The existing figure could be altered in such a way as to show the existing 12 octet version, and the extensions for the new (currently 22 byte) version. However, this would lead to an overly complicated figure. It would be much clearer to use a separate figure to describe the (extended, revised) TLV.

SuggestedRemedy

Remove the edits from "Figure 79-3-Power Via MDI TLV format", restoring it to the same figure as originally published in 802.3at.

Add a new figure, titled "Figure 79-3a-Power Via MDI TLV extended format", at the top of page 10, to document the new 22 octet form of the Power Via MDI TLV.

Modify the existing last two sentences in the explanatory paragraph located between lines 32 and 33 on page 9, which read:

"This TLV is also required to perform Data Link Layer classification as defined in 33.6. Figure 79–3 shows the format of this TLV."

to this statement:

"This TLV is also required to perform Data Link Layer classification as defined in 33.6. The format of the TLV to be used to perform Data Link Layer classification by Type 2 PSEs and PDs is shown in Figure 79–3. The format of the TLV to be used to perform Data Link Layer classification by Type 3 and Type 4 PSEs and PDs is shown in Figure 79-3a."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5.3** *P* **109** *L* **13** # 88

Skinner, John Sifos Technologies, In

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

Tacs Max 87.5ms as defined in Table 33-17a does not appear to provide sufficient margin for a PD that supports Autoclass to be correctly recognized by a PSE that supports Autoclass.

A PSE is allowed to terminate CLASS_EV1_LCF at Tlcf min 88ms (as defined in Table 33-10). If there is any timer inaccuracy between the PSE and PD, the 500usec margin afforded by Tacs max could lead to a case where a PDs autoclass capability will not be identified, even though that PD is changing the class signature within the specified time frame. (would admittedly be poor design practice, but conformant)

A conservative approach would be to reduce the value of Tacs Max in Table 33-17a, to provide adequate margin to account for any timer inaccuracy between the PSE and PD.

SuggestedRemedy

Change the value of Tacs Max in Table 33-17a, Item 1 to 85.5 ms.

Proposed Response *Response Status* **O**

Cl **79** *SC* **79.3.2** *P* **10** *L* **3** # 89

Skinner, John Sifos Technologies, In

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

There is an explanatory paragraph at the top of Page 10 that describes the revisions made to the legacy Power via MDI TLV originally defined by 802.1AB.

As the 802.3bt specification is again revising the Power via MDI TLV (most recently revised by and defined in 802.3at), an additional explanatory paragraph is warranted to describe the extensions that are being added to support Type 3 and Type 4 devices.

SuggestedRemedy

Add the following sentence to the end of the paragraph on Page 10, line 10:

"The TLV shown in Figure 79-3 has been and will continue to be used by Type 2 power entities."

Insert the following paragraphs after line 11, before the heading '79.3.2.1 MDI power support':

"The TLV shown in Figure 79-3a is a revision of the Power Via MDI TLV originally defined in 802.3at-2009 clause 79.3.2, and defines an extended format which includes additional fields that shall be used by Type 3 and Type 4 power entities.

In order to support Type 2 PDs, Type 3 and Type 4 PSEs will need to be able to recognize the TLV shown in Figure 79-3, as well as the TLV shown in Figure 79-3a. Per 79.3.2.7, only one format TLV should be present in an LLDPDU."

[NOTE that the figure reference in this remedy is related to acceptance of the comment that requires that a new figure titled "Figure 79-3a-Power Via MDI TLV extended format" be added to 79.3.2.]

Proposed Response *Response Status* **O**

Cl **79** *SC* **79.3.2.2** *P* **10** *L* **44** # 90

Skinner, John — Sifos Technologies, In

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

IETF RFC 3621 pethPsePortPowerPairs only defines "signal(1)" and "spare(2)". There is no allowance for other integer values (for example, 0 indicating unknown, or 3 indicating both pairs).

SuggestedRemedy

Add sentence at the end of the existing paragraph that is located on lines 43 and 44:

"Type 3 or Type 4 PSEs that are furnishing power on a single pairset shall use the value that defines that pairset (signal=Alternative A, spare=Alternative B). Either pairset may be indicated when furnishing power on both pairsets, as that condition is communicated by the PSE power status value field defined in 79.3.2.6a."

Proposed Response *Response Status* **O**

Cl **79** *SC* **79.3.2.5** *P* **12** *L* **14** # 91

Skinner, John — Sifos Technologies, In

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

The valid values for the requested power value field in Table 79-5 have been changed from "decimal 1 through 255" to "decimal 1 through 999".

This field as defined for use by Type 2 power entities was the range "decimal 1 through 255". Values greater than 255 are not valid for pre-existing Type 2 implementations.

SuggestedRemedy

Change the statement in the Value/meaning column of Table 79-5 to:

"Valid value for these bits are decimal 1 through 255 for Type 2 PDs, and decimal 1 through 999 for Type 3 and Type 4 PDs."

Proposed Response *Response Status* **O**

Cl **79** *SC* **79.3.2.6** *P* **12** *L* **38** # 92

Skinner, John — Sifos Technologies, In

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

The valid values for the requested power value field in Table 79-6 have been changed from "decimal 1 through 255" to "decimal 1 through 999".

This field as defined for use by Type 2 power entities was the range "decimal 1 through 255". Values greater than 255 are not valid for pre-existing Type 2 implementations.

SuggestedRemedy

Change the statement in the Value/meaning column of Table 79-6 to:

"Valid value for these bits are decimal 1 through 255 for Type 2 PSEs, and decimal 1 through 999 for Type 3 and Type 4 PSEs. When a Type 3 or Type 4 is furnishing power to a Type 2 PD, the valid values will be limited to the Type 2 range, decimal 1 to 255."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6** *P* **70** *L* **48** # 93

Skinner, John — Sifos Technologies, In

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

Description of classification missing clarifying language.

SuggestedRemedy

Replace:

"...the PD responds with a current representing a limited number of power classifications."

with:

"...the PD responds to each class event with a current representing one of a limited number of power classifications."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6** *P* **71** *L* **20** # 94

Skinner, John — Sifos Technologies, In

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

Paragraph discussing Autoclass based PSE minimum power setting refers to non-existent information from Table 33-10a.

SuggestedRemedy

The end of the last sentence on lines 19 and 20:

"...may choose to use a lower Autoclass margin than those listed in Table 33-10a."

should be changed to refer to the correct location of the margin information:

"...may choose to use a lower Autoclass margin than those listed in Equation (33-3a)."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6** *P* **72** *L* **7** # 95

Skinner, John — Sifos Technologies, In

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

Table 33-7 Column heading "Number of Classification Events" is not fully descriptive, and does not communicate what the table is trying to convey.

SuggestedRemedy

Change column heading:

"Number of Classification Events"

to:

"Number of Classification Events Required to Achieve Minimum supported power levels."

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* *L* # 96

Skinner, John — Sifos Technologies, In

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

There are a number of sentence constructs that use the "Oxford" comma style, example:

"...MARK_EV1, MARK_EV2, MARK_EV3, or MARK_EV4..."

and constructs that do not use this form, where the last comma is omitted, example:

"...MARK_EV1, MARK_EV2, MARK_EV3, MARK_EV4 and MARK_EV_LAST...".

SuggestedRemedy

The document should use a consistent comma style for listing multiple associated entities. (this commenter's preference is the Oxford style)

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.4** *P* **83** *L* **46** # 97

Skinner, John — Sifos Technologies, In

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

First paragraph uses the parameter name Icon-TBD when discussing dual-signature PDs, "as specified in Table 33-11.".

There is no parameter named Icon-TBD in Table 33-11.

SuggestedRemedy

Add the parameter "Icon-TBD" to Table 33-11, identify as Item 4b. If this parameter is not yet worked out, the Min and Max values should be listed as TBD.

Alternatively - replace the reference to "Icon-TBD" in 33.2.7.4 line 46 with the parameter name "Icon", as the remainder of the normative statement specifies this is the continuous current on each pairset, and the existing parameter Icon already defines the continuous current on a pairset. If this remedy is accepted, the parameter "Icon-TBD" in the first sentence of the paragraph on page 84 line 1 will also need to be replaced with the parameter name "Icon".

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5.2** *P* **106** *L* **48** # 98

Skinner, John — Sifos Technologies, In

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

The descriptive text includes "DO_CLASS_EV6", which is also shown in Figure 33-16. The state diagram in Figure 33.9d, and the related tables and text in subclause 33.2.6 only define five class events (CLASS_EV5 the last).

There appears to be no use of, and therefore no need to describe a sixth class event in subclause 33.3.

SuggestedRemedy

Remove "DO_CLASS_EV6" from the paragraph at line 48, and remove the state "DO_CLASS_EVENT_6" from Figure 33-16.

If this remedy is accepted, it will also be necessary to remove "DO_CLASS_EVENT6" from the third paragraph under 3.3.5.2.1, page 108, line 34.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5.2** *P* **106** *L* **47** # 99

Skinner, John — Sifos Technologies, In

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

The state names "DO_CLASS_EV1", "DO_CLASS_EV2", "DO_CLASS_EV3", "DO_CLASS_EV4", "DO_CLASS_EV5", and "DO_CLASS_EV6" used in the text do not match the state names used in the state diagram shown in Figure 33-16. The state names in Figure 33-16 use the form "DO_CLASS_EVENTn".

SuggestedRemedy

Change the names of the states listed in lines 47 and 48 to match the names used in the state diagram shown in Figure 33-16.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **80** *L* **25** # 100

Beia, Christian — STMicroelectronics

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

Table 33-11
The definition of Ilim_2P is explicit for all classes, except for Type2 Class 4 where it is 1.14*Icable.
It can be calculated using Icable definition in Table 33-1 (0.6A for Types 2,3)

SuggestedRemedy

Replace Ilim_2P, column min, row PSE Type 2, 1.14*Icable, with 0.684

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6** *P* **72** *L* **16** # 101

Beia, Christian STMicroelectronics

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

Table 33-7
Pclass values can be defined as a single number, in order to make the requirement clearer, and easily readable.
Today it is needed to compare Pclass with Ptype. The calculation of Ptype requires looking at different tables.

- Ptype definition in Table 33-11:
  Icable * Vport_PSE_2p_min for Types1,2, and 3 up to Class4;
  2* Icable * Vport_PSE_2p_min for Type3 classes 5-8;
  90W-99.9W for Type4.

- Icable definition in Table 33-1:
  0.35A for Type1;
  0.6A for Types2,3;
  0.96A for Type4.

- Vport_PSE_2p_min definition in Table 33-11:
  44V for Type1;
  50V for Types2,3;
  52V for Type4.

The result of the calculation of Ptype is:
- 15.4W for Type 1
- 30.0W for Type 2 and Type 3 classes 0-4
- 60.0W for Type 3 classes 5-8
- 90W for Type4

So, at the end Ptype is never lower than the defined Pclass and can be removed since it doesn't add any restriction to Pclass.

SuggestedRemedy

Change Table 33-7, third column (Pclass), classes 4 to 8, as follows:

Class 4: 30W
Class 5: 45W
Class 6: 60W
Class 7: 75W
Class 8: 90W

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **81** *L* **7** # 102

Beia, Christian STMicroelectronics

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

Table 33-11
PSE power type minimum value can be calulated instead of leaving the burden to the reader.
This makes the table clearer and avoids misinterpretations.

- Icable definition in Table 33-1:
  0.35A for Type1;
  0.6A for Types2,3;
  0.96A for Type4.

- Vport_PSE_2p_min definition in Table 33-11:
  44V for Type1;
  50V for Types2,3;
  52V for Type4.

The result of the calculation of Ptype is:
- 15.4W for Type 1
- 30.0W for Type 2 and Type 3 classes 0-4
- 60.0W for Type 3 classes 5-8

SuggestedRemedy

Change Table 33-11 Item 12:
- split the first row and make one for PSE Type1 and another for PSE Type 2
- For PSE Type 1 replace comumn Min Icable * (Vport_PSE-2p min) with 15.4
- For PSE Type 2 replace comumn Min Icable * (Vport_PSE-2p min) with 30.0
- For PSE Type 3(note1) replace comumn Min Icable * (Vport_PSE-2p min) with 30.0
- For PSE Type 3 replace comumn Min 2*Icable * (Vport_PSE-2p min) with 60.0

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7.2** *P* **112** *L* **23** # 103

Bennett, Ken — Sifos Technologies, In

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

It's not clear that the PClass_PD limit in table 33-18 is determined by the Class assigned (or allocated) by the PSE. The suggested remedy adds a clarifying sentence to 33.3.7.2.

SuggestedRemedy

Add the following after the first sentence of 33.3.7.2:

PClass_PD in table 33-18 is determined by the Class assigned by the PSE.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.2** *P* **97** *L* **1** # 104

Bennett, Ken — Sifos Technologies, In

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

The second sentence at the top of the page states:
Type 4/DS PDs only advertise Class 5.

Which does not match the two statements below:

Pg 96, Ln 54: "Type 4/DS PDs advertise a Class signature of 5 on at least one pairset."
Pg 107, Ln 45: "Dual-signature PDs may advertise a different Class signature on each pairset."

SuggestedRemedy

Change pg 97 Line 1 to:

...Type 4/DS PDs advertise Class 5 on at least one pairset.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.6.3.2** *P* **142** *L* **53** # 105

Bennett, Ken — Sifos Technologies, In

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

PSE_INITIAL_VALUE settings for Class 6 and Class 8 are currently the extended-power limits. A range should be used for these so that non-extended values can be used.

SuggestedRemedy

Change "600" to "<= 600"
Change "900" to "<= 900"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **64** *L* **10** # 106

Bennett, Ken — Sifos Technologies, In

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

The Type 3 and 4 State diagram in 33-9D needs to be updated to provide the behaviors described in Table 33D-1 and 33D-2.

This is comment 1 of 4 and refers to the output of CLASS_EV1_LCF

(Note: (pse_avail_pwr<3); 3="Class 4")

SuggestedRemedy

Change Path leading to MARK_EV_LAST to:

Tclf_timer_done * [
[(sig_type=single) * [(mr_pd_class_detected<4) + (pse_avail_pwr<3)]] +
[(sig_type=dual) * (pd_req_pwr>pse_avail_pwr)]]

Change Path leading to MARK_EV1 to:

Tclf_timer_done * [
[(sig_type=single) * [(mr_pd_class_detected = 4) * (pd_req_pwr <= pse_avail_pwr)] +
[(sig_type=dual) * (pd_req_pwr <= pse_avail_pwr)]]

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **64** *L* **21** # 107

Bennett, Ken — Sifos Technologies, In

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

The Type 3 and 4 State diagram in 33-9D needs to be updated to provide the behaviors described in Table 33D-1 and 33D-2.

This is comment 2 of 4 and refers to the output of CLASS_EV2

(Note: (pse_avail_pwr>3); 3="Class 4")

SuggestedRemedy

Change Path leading to MARK_EV_LAST to:

Tcle2_timer_done * (mr_pd_class_detected=temp_var) *
[[(sig_type=single) * (pd_req_pwr>=pse_avail_pwr)] +
(sig_type!=dual)]

Change Path leading to MARK_EV2 to:

Tcle2_timer_done * (mr_pd_class_detected = temp_var) *
[[(sig_type=single) * (pse_avail_pwr>3)] +
(sig_type=dual)]

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **64** *L* **27** # 108

Bennett, Ken — Sifos Technologies, In

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

The Type 3 and 4 State diagram in 33-9D needs to be updated to provide the behaviors described in Table 33D-1 and 33D-2.

This is comment 3 of 4 and refers to the output of CLASS_EV3

(Note: (pse_avail_pwr=4, pse_avail_pwr>4); 4="Class 5")

SuggestedRemedy

Change Path leading to MARK_EV_LAST to:

Tcle3_timer_done * [(mr_pd_class_detected=4) +
[(sig_type=single) * (pd_req_pwr>pse_avail_pwr) * (pse_avail_pwr=4)] +
[(sig_type=dual) * [(mr_pd_class_detected = 0) + (pd_req_pwr > pse_avail_pwr)
]]

Change Path leading to MARK_EV3 to:

Tcle3_timer_done * [(mr_pd_class_detected!=4) *
[(sig_type=single) * [(pd_req_pwr>pse_avail_pwr) * (pse_avail_pwr>4)] +
(pd_req_pwr<=pse_avail_pwr)] +
[(sig_type=dual) * [(mr_pd_class_detected=3) + (pd_req_pwr<=pse_avail_pwr)]]

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **64** *L* **35** # 109

Bennett, Ken — Sifos Technologies, In

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

The Type 3 and 4 State diagram in 33-9D needs to be updated to provide the behaviors described in Table 33D-1 and 33D-2.

This is comment 4 of 4 and refers to the output of CLASS_EV4

SuggestedRemedy

Change Path leading to MARK_EV_LAST to:

Tcle4_timer_done * (mr_pd_class_detected = temp_var) *
[(mr_pd_class_detected<2) +
[(sig_type=single) * (pd_req_pwr>pse_avail_pwr)] +
(sig_type=dual)]

Change Path leading to MARK_EV4 to:

Tcle4_timer_done * (mr_pd_class_detected=temp_var) *
[(mr_pd_class_detected>1) * [[(sig_type=single) * (pd_req_pwr<=pse_avail_pwr)] +
(sig_type!=dual)]]

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **64** *L* **42** # 110

Bennett, Ken — Sifos Technologies, In

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

The CLASS_EVAL box outputs in the State diagram of 33-9A needs to be updated.

The Class Eval box currently denies power in all cases when the PD request exceeds the PSE Available power.

The suggested remedy produces the behaviors described in Tables 33D-1 and 33D-2.

(Note: (pse_avail_pwr<2); 2="Class 3,0")

SuggestedRemedy

Change Path leading to POWER_UP to:

ted_timer_done * [(pd_req_pwr<=pse_avail_pwr) + [(pd_req_pwr>pse_avail_pwr) *
(pse_avail_pwr>1)]]

Change Path leading to POWER_DENIED to:

!ted_timer_done + [(pd_req_pwr>pse_avail_pwr) * (pse_avail_pwr<2)]

Proposed Response *Response Status* **O**

Cl **33** *SC* **0** *P* **0** *L* # 111

Yseboodt, Lennart — Philips

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

The capitalization of Class should only have been done when referring to a power Class.
eg. Class 5, Class 7.
Something like a 'class event' should not be capitalized.

SuggestedRemedy

Editor to go through document and check capitalization of Class and class.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33** *P* **0** *L* **0** # 112
Yseboodt, Lennart Philips

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

Page numbers in the PDF reset on clause boundary.

SuggestedRemedy

Editor to make sure page numbering keeps going such that PDF page nr matches with document page nr.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.9** *P* **6** *L* **5** # 113
Yseboodt, Lennart Philips

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

We need to visit Clause 30.9 when Clause 33 is stable to implement all addition.

SuggestedRemedy

Add editors note to 30.9: "TODO: visit this section and make consistent with Clause 33 & 79".

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.6** *P* **86** *L* **42** # 114
Yseboodt, Lennart Philips

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

original text: "If IPort-2P, the current supplied per pairset by the PSE to the PI, exceeds ICUT-2P for longer than TCUT-2P, the PSE may remove power from that pairset."

It should be Icut-2P(min) and Tcut-2P(min)

SuggestedRemedy

"If IPort-2P, the current supplied per pairset by the PSE to the PI, exceeds ICUT-2P(min) for longer than TCUT-2P(min), the PSE may remove power from that pairset."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.0a** *P* **32** *L* **45** # 115
Yseboodt, Lennart Philips

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

Optional is misleading, see footnote as exception

SuggestedRemedy

Change to "Optional^2 or Mandatory"
Change cell to the left of it (on Phys. Lay. Class.) to
"Multiple-Event or Single-Event", so it matches in logical order.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **45** *L* **23** # 116
Yseboodt, Lennart Philips

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

"1: PSE performs Single-Event Physical Layer classification."

Since we now consider 1 class_ev + 1 mark_ev = Multiple-event, this is no longer correct for Type 3 and 4.

SuggestedRemedy

"1: A Type 1 PSE performs Single-Event Physical Layer Classification.
A Type 2 PSE performs Single-Event Physical Layer Classification or Multiple-Event Physical Layer classification with a maximum of 1 Class event.
A Type 3 or Type 4 PSE performs Multiple-Event Physical Layer classification with a maximum of 1 Class event."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **46** *L* **15** # 117
Yseboodt, Lennart Philips

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

"The PSE monitors either the DC or AC Maintain Power Signature (MPS, see 33.2.9.1)."
AC MPS does not exist anymore in Type 3 and 4

SuggestedRemedy

"Type 1 and Type 2 PSEs monitor either the DC or AC Maintain Power Signature (MPS).
Type 3 and Type 4 PSEs monitor the DC Maintain Power Signature (MPS, see 33.2.9.1)."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.2** *P* **76** *L* **7** # 118

Yseboodt, Lennart Philips

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

The sentence: "The PSE shall classify the PD only once".
Seems to preclude classification of dual signature altogether. After all, a DS PD is ONE PD, but it needs to be classified on each pairset.

SuggestedRemedy

Remove "The PSE shall classify the PD only once"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.2** *P* **77** *L* **27** # 119

Yseboodt, Lennart Philips

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

Table 33-10, item 8 on T_ME2.
The add. info says:
"The maximum value of T ME2 cannot exceed the maximum allowed time from end of detection until power-on which is limited by 33.2.7.12."

This means the maximum time is Tpon, which is not the intention.

SuggestedRemedy

"The maximum value of T ME2 cannot cause a violation of Tpon, as defined in section 33.2.7.12."

Alternative: remove add. info.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.3** *P* **78** *L* **44** # 120

Yseboodt, Lennart Philips

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

Autoclass window Tauto_PSE2 is not the correct.

SuggestedRemedy

Change to: "Autoclass window between Tauto_PSE2 and Tauto_PSE1"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5.2** *P* **107** *L* **45** # 121

Yseboodt, Lennart Philips

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

"Dual-signature PDs may advertise a different Class signature on each pairset."

Do we really want to write this out in the standard ?
It adds significant complication as it has:
- unique behaviour / rules for continuous power
- power demotion very tricky

SuggestedRemedy

Remove this sentence.
We don`t forbid DS/unequal classes, we simply do not specify it at all.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5.2** *P* **108** *L* **18** # 122

Yseboodt, Lennart Philips

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

Table 33-17, item 7 is Long first Class Event timing, Tlcf_pd, with range 75.5 to 87.5 ms.
Tlcf = 88 to 105 ms.

The minimum makes sense, the maximum does not.
This parameter determines the conditions where a PD is allowed to deem a class event as 'long'.
As soon as a class event exceeds 88ms (= Table 33-10 / T_LCF).

Also see 33.3.8:
"Types 3 and 4 PDs which detect a long first Class event in the range of T LCF_PD may ..."

SuggestedRemedy

Remove maximum.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.6** *P* **109** *L* **30** # 123
Yseboodt, Lennart Philips

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

"A PD shall identify a PSE Type as a Type lower or equal to its own Type"
"A PD connected to a higher PSE Type than its own may identify that PSE as its own Type."
What does this do ?
How can it be tested ?

SuggestedRemedy

Remove sentences ?

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7.6** *P* **116** *L* **48** # 124
Yseboodt, Lennart Philips

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

"A Type 2 ,Type 3, and Type 4 PD that demand less than Class 5 power levels shall ..."

There are no Type 4 PDs at Class 5 or lower.
s/demand/demands.

SuggestedRemedy

"A Type 2 and Type 3 PD that demands less than Class 5 power levels shall ..."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7.6** *P* **117** *L* **17** # 125
Yseboodt, Lennart Philips

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

"A Type 3 or Type 4 PD that demands Class 5 power levels shall meet both of the following:"

There are no Type 4 PDs at Class 5.

SuggestedRemedy

"A Type 3 that demands Class 5 power levels shall meet both of the following:"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.7** *P* **87** *L* **38** # 126
Yseboodt, Lennart Philips

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

"Figure 33-14--POWER_ON state, per pairset operating current templates for PSEs that operate in 2-pair mode, Type 3 and Type 4 dual-signature PSEs"

SuggestedRemedy

dual-signature PSEs => Dual-signature PDs.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.7** *P* **88** *L* **26** # 127
Yseboodt, Lennart Philips

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

Figures 33-14 a and b have incorrect aspect ratio.

SuggestedRemedy

Do not change aspect ratio.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.7** *P* **88** *L* **43** # 128
Yseboodt, Lennart Philips

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

Figure 33-14b: TLIMMIN is not consistent with TLIMMIN-2P in rest of figures

SuggestedRemedy

Change to: TLIMMIN-2P

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.7** *P* **89** *L* **36** # 129
Yseboodt, Lennart Philips

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

"is the maximum power PSE Type power" is strange sentence

SuggestedRemedy

"is the maximum power for a given PSE Type"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.5** *P* **102** *L* **33** # 130
Yseboodt, Lennart Philips

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

"Editor's Note: PD state diagram needs to be updated for Autoclass."

SuggestedRemedy

"Editor's Note: PD state diagram needs to be updated for Autoclass and detecting long class event."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5.2** *P* **107** *L* **40** # 131
Yseboodt, Lennart Philips

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

" a Type 2, Type 3 and Type 4 PD's pse_power_level state variable is set to '1.' "

Period not at end of sentence.

SuggestedRemedy

" a Type 2, Type 3 and Type 4 PD's pse_power_level state variable is set to '1'. "

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5.3** *P* **108** *L* **47** # 132
Yseboodt, Lennart Philips

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

original text: "Please see Annex 33B for more information on Autoclass."
Wrong annex referenced

SuggestedRemedy

Please see Annex 33C for more information on Autoclass.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7.5** *P* **116** *L* **9** # 133
Yseboodt, Lennart Philips

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

"is the voltage at PSE"

SuggestedRemedy

Change to: "is the voltage at the PSE PI"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7.6** *P* **116** *L* **38** # 134
Yseboodt, Lennart Philips

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

PClass_PD_max needs to be subscripted.

SuggestedRemedy

Change to subscript

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7.6** *P* **116** *L* **39** # 135
Yseboodt, Lennart Philips

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

"A Type 4 PD with peak power draw that does not exceed PClass PD max and has an input capacitance of 360mF or less requires no special considrations with regards to transients at the PD PI."

Typo.

SuggestedRemedy

"A Type 4 PD with peak power draw that does not exceed PClass PD max and has an input capacitance of 360mF or less requires no special _considerations_ with regards to transients at the PD PI."

Proposed Response *Response Status* **O**

Cl **33** SC **33.3.7.6** P **117** L **24** # 136
Yseboodt, Lennart Philips

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

original text: "....The input votage source drives both PD Modes ..."
typo "votage"

SuggestedRemedy

"... The input voltage source drives both PD Modes ..."

Proposed Response *Response Status* **O**

Cl **33** SC **33.3.7.6** P **117** L **36** # 137
Yseboodt, Lennart Philips

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

original text: "....The input votage source drives both PD Modes ..."
again typo "votage"

SuggestedRemedy

....The input voltage source drives both PD Modes ...

Proposed Response *Response Status* **O**

Cl **33** SC **33.3.7.8** P **118** L **8** # 138
Yseboodt, Lennart Philips

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

"... shall be valid within T_Class as specified in Table 33-18 ..."

Parameter name is T_class (no capital)

SuggestedRemedy

"... shall be valid within T_class as specified in Table 33-18 ..."

Proposed Response *Response Status* **O**

Cl **33** SC **33.3.7.9** P **118** L **44** # 139
Yseboodt, Lennart Philips

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

Table 33-18a, item 3, add. info says "See Annex 33A,5"
Should be period.

SuggestedRemedy

"See Annex 33A.5"

Proposed Response *Response Status* **O**

Cl **33** SC **33.3.8** P **119** L **31** # 140
Yseboodt, Lennart Philips

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

"or a PD which does not detect a long first Class event,"

In this case Class does not need to be capitalized.
Occurs on line 31, 34 and 35.

SuggestedRemedy

"or a PD which does not detect a long first class event,"

Proposed Response *Response Status* **O**

Cl **33** SC **33.3.8** P **119** L **34** # 141
Yseboodt, Lennart Philips

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

"Types 3 and 4 PDs which detect..."

SuggestedRemedy

"Type 3 and Type 4 PDs that detect..."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8** *P* **119** *L* **46** # 142
Yseboodt, Lennart Philips

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

original text: "See Annex TBD for PD design guidelines for MPS behavior."
Annex TBD referenced.

SuggestedRemedy

Generate it as an empty structure and reference correctly.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8** *P* **121** *L* **36** # 143
Yseboodt, Lennart Philips

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

Table 33-19a, lowermost/rightmost cell contains "by "short_mps = TRUE (T_LCF)"
Some garbage crept in.

SuggestedRemedy

Replace by "short_mps = TRUE"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.4.3** *P* **124** *L* **19** # 144
Yseboodt, Lennart Philips

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

"for a 10GBASE-T PHY" seems to be misplaced somehow.

SuggestedRemedy

Not clear where it belongs.

Proposed Response *Response Status* **O**

Cl **79** *SC* **79.3.2.6d** *P* **15** *L* **22** # 145
Yseboodt, Lennart Philips

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

original text: "Table 79-6c PD measurements"
Table caption wrong.

SuggestedRemedy

Table 79-6d PSE measurements

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **56** *L* **7** # 146
Yseboodt, Lennart Philips

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

State "1-EVENT_CLASS" was renamed to "Single-Event_CLASS", probably by accident in the bulk rename of 1-Event to Single-Event.
Undesired in state names.

SuggestedRemedy

Revert to "1-EVENT_CLASS".

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.2** *P* **76** *L* **4** # 147
Yseboodt, Lennart Philips

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

"A Type 3 or Type 4 PSE connected to a single-signature PD shall..."
"A Type 3 or Type 4 PSE connected to a dual-signature PD shall..."

SuggestedRemedy

dual-signature should be Dual-signature.
Ditto for Single-signature.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.2** *P* **77** *L* **1** # 148

Yseboodt, Lennart Philips

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

Table 33-10 still uses "1-Event" terminology.

SuggestedRemedy

Change to Single-event in:
- Header
- Line 1,2 and 11.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5** *P* **105** *L* **10** # 149

Yseboodt, Lennart Philips

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

Table 33-15a says in a Table note: "Any PD that is limited to Class 0-3 power levels may omit DLL support."
Next we have text that says (or should say, see other comment):
"Single-signature PDs not capable of drawing more than Class 3 power levels may omit Data Link Layer classification (see 33.6)."

Slightly different statement with the same effect, on the same page.

SuggestedRemedy

Remove the text on line 46-48.
Change Table 33-15a note to:
"Single-signature PDs not capable of drawing more than Class 3 power levels may omit Data Link Layer classification (see 33.6)."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7.3** *P* **113** *L* **30** # 150

Yseboodt, Lennart Philips

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

original text: "See PSE-PD simplified Cport implementation model in Annex TBD."
Do we really need an Annex to explain this implementation issue ?

BC:EYO

SuggestedRemedy

Remove this line.
If it really needs explanation that cannot be done in 33.3.7.3 we should submit actual Annex contents.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8** *P* **119** *L* **44** # 151

Yseboodt, Lennart Philips

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

"Editor's Note: To add line for Type 1 and Type 2 dual-signature."

I don't think we want to describe the behaviour of Type 1/Type 2 dual-signature.

SuggestedRemedy

Remove editors note.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8** *P* **119** *L* **50** # 152

Yseboodt, Lennart Philips

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

"A PD that does not maintain the MPS components mentioned above may have its power removed..."

Reference by relative physical location in the draft probably a bad idea.

SuggestedRemedy

"A PD that does not maintain the MPS components in section 33.3.8 may have its power removed..."

Proposed Response *Response Status* **O**

Cl **33D** *SC* **33D.1** *P* **4** *L* **1** # 153

Yseboodt, Lennart Philips

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

Table 33D-2 on dual signature classification has a CLASS_EV5 column. There is no 5th event for DS PDs.

SuggestedRemedy

Remove CLASS_EV5 column.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4** *P* **30** *L* **24** # 154

Yseboodt, Lennart Philips

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

DC loop resistance values are not centered in Y-axis of cell.

SuggestedRemedy

Center values.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **65** *L* **3** # 155

Yseboodt, Lennart Philips

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

Editors note on the state diagram.

SuggestedRemedy

Append:
"State diagram for Type 3 and 4 does not address dual-signature. Preferably this goes into a separate diagram to keep complexity manageable."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.0a** *P* **66** *L* **9** # 156

Yseboodt, Lennart Philips

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

"While the exact method of the connection check is left to the implementer, the PSE shall..."

Implementation is always decoupled from the specification. No need to call this out specifically here.

SuggestedRemedy

"During connection check, the PSE shall..."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.0a** *P* **66** *L* **26** # 157

Yseboodt, Lennart Philips

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

Table 33-3a, Items 1 and 2, Max value is 0.40
Convention seems to be to use 3 digits after the dot.

SuggestedRemedy

Replace 0.40 by 0.400 (twice).

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6** *P* **71** *L* **14** # 158

Yseboodt, Lennart Philips

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

The Pclass formula 33-3 and the parameter description have a Autoclass paragraph in between.

SuggestedRemedy

Reconnect Formula and parameter description.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.2** *P* **74** *L* **37** # 159

Yseboodt, Lennart Philips

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

"Type 2 PSEs shall provide a maximum of 2 Class and 2 mark events. Type 3 PSEs shall provide a maximum of 4 Class and 4 mark events. Type 4 PSEs shall provide a maximum of 5Class and 5 mark events."

Capitalization gone wrong.

SuggestedRemedy

"Type 2 PSEs shall provide a maximum of 2 class and 2 mark events. Type 3 PSEs shall provide a maximum of 4 class and 4 mark events. Type 4 PSEs shall provide a maximum of 5 class and 5 mark events."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.2** *P* **74** *L* **44** # 160

Yseboodt, Lennart Philips

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

Iclass is smaller letters than normal subscript.

SuggestedRemedy

Change the subscript to a larger font

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.2** *P* **75** *L* **16** # 161

Yseboodt, Lennart Philips

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

"... as defined in Table 33-10 The timing specification... "
Missing dot after 33-10

SuggestedRemedy

Add dot

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **78** *L* **51** # 162

Yseboodt, Lennart Philips

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

"Table 33-11 limits show values that support worst-case operating limits."

SuggestedRemedy

"Table 33-11 limit values support operation under worst-case operating conditions."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **82** *L* **30** # 163

Yseboodt, Lennart Philips

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

Figure(s) 33-14 describe the required current capabilities and the current limits of a PSE. As such, these Figures do not belong in the short-circuit section, their scope is beyond that, but
should be placed right after Table 33-11.

SuggestedRemedy

Move Figure 33-14, 33-14a and 33-14b right after Table 33-11.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.9.1.1.4** *P* **7** *L* **1** # 164

Yseboodt, Lennart Philips

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

original text: "An ENUMERATED VALUE that has one of the following entries: ... Pinout A and B listed"
4 pair pinout missing

SuggestedRemedy

Amend to list:
bothPSE Pinout Alternative A and Alternative B

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.9.1.1.6** *P* **7** *L* **53** # 165

Yseboodt, Lennart Philips

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

original text: "An ENUMERATED VALUE that has one of the following entries: ... Class 0 to 4 PD"

bt classes missing

SuggestedRemedy

Append to list:

class5Class 5 PD
class6Class 6 PD
class7Class 7 PD
class8Class 8 PD

Add editors note: "Dual signature also needs to be addressed here".

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.2.1.14** *P* **14** *L* **19** # 166

Yseboodt, Lennart Philips

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

original text: "BIT STRING [SIZE (2)]"

"A GET attribute that returns a bit string indicating whether the local system is a PSE or a PD and whether it is Type 1 or Type 2. The first bit indicates Type 1 or Type 2. The second bit indicates PSE or PD. A PSE shall set this bit to indicate a PSE. A PD shall set this bit to indicate a PD.;"

SuggestedRemedy

"BIT STRING [SIZE (3)]"
"A GET attribute that returns a bit string indicating whether the local system is a PSE or a PD and whether it is Type 1, Type 2, Type 3 or Type 4. The first two bits indicate Type 1, Type 2, Type 3 or Type 4. The third bit indicates PSE or PD. A PSE shall set this bit to indicate a PSE. A PD shall set this bit to indicate a PD.;"

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.2.1.18a** *P* **15** *L* **44** # 167

Yseboodt, Lennart Philips

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

original text: "The PD measured voltage value is encoded according to Equation (79-x), where x is the decimal value of aLldpXdot3LocPDMeasuredVoltageValue."

This calculation is actually in Table 79-6c.

SuggestedRemedy

"The PD measured voltage value is encoded according to Table 79-6c, the decimal value of bits is aLldpXdot3LocPDMeasuredVoltageValue."

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.2.1.18b** *P* **16** *L* **2** # 168

Yseboodt, Lennart Philips

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

original text: "The PD measured current value is encoded according to Equation (79-x), where x is the decimal value of aLldpXdot3LocPDMeasuredCurrentValue"

This calculation is actually in Table 79-6c.

SuggestedRemedy

"The PD measured current value is encoded according to Table 79-6c, the decimal value of bits is aLldpXdot3LocPDMeasuredCurrentValue"

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.2.1.18c** *P* **16** *L* **14** # 169

Yseboodt, Lennart Philips

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

original text: "The PSE measured voltage value is encoded according to Equation (79-x), where x is the decimal value of aLldpXdot3LocPSEMeasuredVoltageValue"

This calculation is actually in Table 79-6d.

SuggestedRemedy

"The PSE measured voltage value is encoded according to Table 79-6d, the decimal value of bits is aLldpXdot3LocPSEMeasuredVoltageValue"

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.2.1.18d** *P* **16** *L* **26** # 170

Yseboodt, Lennart Philips

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

original text: "The PSE measured voltage value is encoded according to Equation (79-x), where x is the decimal value of aLldpXdot3LocPSEMeasuredCurrentValue"
This calculation is actually in Table 79-6d.

SuggestedRemedy

"The PSE measured voltage value is encoded according to Table 79-6d, the decimal value of bits is aLldpXdot3LocPSEMeasuredCurrentValue"

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.3.1.14** *P* **23** *L* **4** # 171

Yseboodt, Lennart Philips

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

original text: "BIT STRING [SIZE (2)]
BEHAVIOUR DEFINED AS:
A GET attribute that returns a bit string indicating whether the remote system is a PSE or a PD and whether it is Type 1 or Type 2. The first bit indicates Type 1 or Type 2. The second bit indicatesPSE or PD."

Add new types

SuggestedRemedy

"BIT STRING [SIZE (3)]"
"A GET attribute that returns a bit string indicating whether the remote system is a PSE or a PD and whether it is Type 1, Type 2, Type 3 or Type 4. The first two bits indicate Type 1, Type 2, Type 3 or Type 4. The third bit indicates PSE or PD.;"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **48** *L* **39** # 172

Yseboodt, Lennart Philips

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

"pse_skips_multiclass:
The PSE can choose to bypass a portion of the classification state flow. A variable that is set in an implementation-dependent manner."

Only applies to Type 2 PSEs that support DLL.

SuggestedRemedy

"pse_skips_multiclass:
A Type 2 PSE can choose to bypass a portion of the classification state flow. A variable that is set in an implementation-dependent manner."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.6** *P* **53** *L* **33** # 173

Yseboodt, Lennart Philips

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

"When a PSE powers a PD of lower Type (Type PD) than its own..."
"... the PSE shall meet the PI electrical requirements of the PD Type..."
Yes, this paragraph again.

This statement has broad sweeping implications, for instance it forbids 4-pair powering of Type 1/2 PDs.
We have made a lot of changes to parameters for Type 3 and Type 4, it would be impractical for a Type 3/4 PSE to morph into a Type 1/2 PSE.

SuggestedRemedy

Revert this paragraph to the 802.3-2012 version, which only says what a Type 2 PSE must do.
If there are specific interoperability issues between Type 3/4 and Type 1/2, we deal with those
separately.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **64** *L* **14** # 174

Yseboodt, Lennart Philips

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

Figure 33-9d, Transition from CLASS_EV1_LCF to MARK_EV1:
"tlcf_timer_done * !pse_skips_multiclass * ..."

pse_skips_multiclass does not apply to Type 3 or Type 4 PSEs.

SuggestedRemedy

XX=remove
"tlcf_timer_done * XX!pse_skips_multiclass *XX ..."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6** *P* **70** *L* **29** # 175

Yseboodt, Lennart Philips

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

This section needs to be made consistent with the new Figures 33-14.

SuggestedRemedy

See presentation yseboodt_1_1015_baseline_fig3314_vXX.pdf

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6** *P* **72** *L* **1** # 176

Yseboodt, Lennart Philips

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

Table 33-7 does not provide dual-signature classes.

SuggestedRemedy

See yseboodt_table_33_7_v1XX.pdf

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.2** *P* **76** *L* **16** # 177

Yseboodt, Lennart Philips

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

Table 33-9 shows a direct link between class currents and "Class".
This was true for af/at, but this is more complicated now.

The PSE section does not have a Table 33-16a equivalent. This should be still be done.

SuggestedRemedy

Change "Class" to "class signature" in Table 33-9

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.4** *P* **84** *L* **1** # 178

Yseboodt, Lennart Philips

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

original text: "When connected to a dual-signature PD, Icon-TBD is the minimum current of a pairset that a PSE has to support."

Get rid of TBD in variable name.

SuggestedRemedy

See presentation yseboodt_1_1015_baseline_fig3314_vXX.pdf

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.2** *P* **96** *L* **42** # 179

Yseboodt, Lennart Philips

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

"Type 3/SS PDs operating up to a maximum power draw corresponding to Class 3 or less implement a minimum of Single-Event Physical Layer Classification and advertise a Single-Event Class signature of 1,2, or 3."

Only Type 1 PDs perform Single-Event classification.
Replace Single-Event classification => Multiple-Event classification

SuggestedRemedy

"Type 3/SS PDs operating up to a maximum power draw corresponding to Class 3 or less implement a minimum of Multiple-Event Physical Layer Classification and advertise a Class signature of 1,2, or 3."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5** *P* **105** *L* **46** # 180

Yseboodt, Lennart Philips

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

"PD's of all Types not capable of drawing more than Class 3 power levels may omit Data Link Layer classification (see 33.6)."

Only true for SS PDs. DS PDs always need to support DLL + spell fix.

SuggestedRemedy

"Single-signature PDs not capable of drawing more than Class 3 power levels may omit Data Link Layer classification (see 33.6)."

Possibly OBE by previous comment.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5.3** *P* **109** *L* **19** # 181

Yseboodt, Lennart Philips

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

Table 33-17a, Item 3, Autoclass power draw end time needs to be updated to reflect changes in PSE section made to D1.3.

SuggestedRemedy

Change T_auto_pd2 from 3.28 to 3.65 seconds.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5.3** *P* **109** *L* **1** # 182

Yseboodt, Lennart Philips

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

"After power up, a PD implementing Autoclass shall draw its highest required power throughout the period bounded by ..."

This statement may lead the reader to believe that a PD using Autoclass is not subject to power demotion (which it is).

SuggestedRemedy

"After power up, a PD implementing Autoclass shall draw its highest required power, subject to the requirements on Pclass_pd in 33.3.7.2, throughout the period bounded by ..."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7** *P* **110** *L* **27** # 183

Yseboodt, Lennart Philips

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

Table 33-18, Item 1, PD input voltage.
The values for Class 5/DS and Class 8 are different. They must be the same.
Recalculating this results in 41.1826V.

SuggestedRemedy

Change Item 5, row Class 5/DS to 41.2V.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7.9** *P* **118** *L* **46** # 184

Yseboodt, Lennart Philips

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

Table 33-18a, item 4, PD Power has value "Set to maximum per its Class".
How exactly can the PD power be set ? This is not a controllable parameter in most PDs.

SuggestedRemedy

Remove item 4, perhaps add to the text that the PD should be put in a mode where it consumes maximum power where applicable.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8** *P* **119** *L* **27** # 185

Yseboodt, Lennart Philips

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

"In order to maintain power, the PD shall provide a valid Maintain Power Signature (MPS) at the PI."

This language prohibits NOT showing MPS if the goal is to become unpowered.

SuggestedRemedy

"A PD that requires power from the PI shall provide a valid Maintain Power Signature (MPS) at the PI."
This makes the 'shall' conditional upon needing power or not.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8** *P* **119** *L* **41** # 186

Yseboodt, Lennart Philips

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

"PDs using Autoclass shall use the I port_MPS associated with the PD Class advertised during Physical Layer classification."

The PSE MPS rules are determined by the Class assigned to the PD, not what it advertized.
Example: A Class 5/Autoclass PD, that gets power demoted to Class 4, gets to use Class 4 MPS rules.

SuggestedRemedy

"PDs using Autoclass shall use the I port_MPS associated with the PD Class assigned by the PSE during Physical Layer classification."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.6** *P* **141** *L* **11** # 187

Yseboodt, Lennart Philips

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

"Type 2, Type 3 and Type 4 PDs that require more than 13.0 W support Data Link Layer classification (see 33.3.5).
Data Link Layer classification is optional for all other devices."

Dual-signature PDs must support DLL regardless of power consumption.

SuggestedRemedy

"Type 2, Type 3 and Type 4 PDs that require more than Class 3 power levels, or Type 3/DS and Type 4/DS PDs support Data Link Layer classification (see 33.3.5). Data Link Layer classification is optional for all other devices."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5.1** *P* **B106** *L* **30** # 188

Yseboodt, Lennart Philips

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

The Type 3 specific Class 0 signature current was removed from Table 33-16.
While Class 0 no longer exists for Type 3, the Class signature '0' still does.

SuggestedRemedy

Restore missing Type 3 specific Class 0 signature from D1.2.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5.3** *P* **B108** *L* **50** # 189

Yseboodt, Lennart Philips

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

"A PD implementing Autoclass shall remove its classification current at T ACS (as defined in Table 33-17a), resulting in a classification signature of '0' for the remainder of CLASS_EV1."

Contradiction since classification signature of '0' is between 1mA and 4mA.

SuggestedRemedy

"A PD implementing Autoclass shall reduce its classification current at T ACS (as defined in Table 33-17a), resulting in a classification signature of '0' for the remainder of CLASS_EV1."

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4** *P* **20** *L* **30** # 190

Dove, Daniel Dove Networking Solut

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

Link to 33.2.3 not valid

SuggestedRemedy

Add a hyperlink

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4** *P* **20** *L* **32** # 191

Dove, Daniel Dove Networking Solut

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

Definition of Single Singature PD doesn't clarify if it applies to all types of PDs, or only specific types. Since Type 1 and 2 PDs were never distinguished by signature type, I'm not clear whether this should only apply to Type 3 and Type 4, or we retro-define Type 1 and Type 2 PDs.

SuggestedRemedy

Task Force decide which types of PDs will identify as single-signature PDs and change as necessary.

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4** *P* **20** *L* **34** # 192

Dove, Daniel — Dove Networking Solut

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

Definition of Dual Singature PD doesn't clarify if it applies to all types of PDs, or only specific types. Since Type 1 and 2 PDs were never distinguished by signature type, I'm not clear whether this should only apply to Type 3 and Type 4, or we retro-define Type 1 and Type 2 PDs.

SuggestedRemedy

Task Force decide which types of PDs will identify as dual-signature PDs and change as necessary. Is such a change within scope of PAR/objectives/Criteria?

Proposed Response *Response Status* **O**

Cl **25** *SC* **25.4.7** *P* **25** *L* **43** # 193

Dove, Daniel — Dove Networking Solut

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

Text says Type 2, but earlier reference (pg 24, line 1) states "Type 2 or greater".

SuggestedRemedy

add the words "or greater" behind the words "Type 2" twice in this paragraph.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.2.1.18a** *P* **37** *L* **38** # 194

Dove, Daniel — Dove Networking Solut

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

For these new variables, I could not find a tolerance spec. Should there be one?

SuggestedRemedy

If so, please include a tolerance on the accuracy of the values provided.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4** *P* **52** *L* **41** # 195

Dove, Daniel — Dove Networking Solut

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

Note 2 should only apply for Type 3 when in 4 pair operation. This note doesn't clarify that

SuggestedRemedy

In Type 3 and Type 4 operation, (when operating on all 4 pairs) the

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.3** *P* **63** *L* **36** # 196

Dove, Daniel — Dove Networking Solut

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

I don't think this statement is explicit enough

SuggestedRemedy

replace "use" with "use only the"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.1** *P* **64** *L* **27** # 197

Dove, Daniel — Dove Networking Solut

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

I think this sentence only applies to Type 1 and Type 2 PSEs. Does this apply for the case of 4P powering PSE? Example: CC finds DS PD, Seq 0, starts both detections at once.

SuggestedRemedy

Replace "PSE" with "Type 1 or Type 2 PSE"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.3** *P* **64** *L* **53** # 198

Dove, Daniel — Dove Networking Solut

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

A cost improvement is possible if detection for dual-signature PDs can be performed in sequence rather than simultaneously.

SuggestedRemedy

See state diagram changes in bullock_01_3bt_1015 for detail, as I believe Chris addresses this in his presentation.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **65** *L* **17** # 199

Dove, Daniel — Dove Networking Solut

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

There are a number of variables that are declared in text one way, and in the State Diagram in another way.

SuggestedRemedy

Editor review & reconcile all variables in text with diagram. Examples; Alt_A_pwrd (text) alt_a_pwrd (diagram)

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **65** *L* **38** # 200

Dove, Daniel — Dove Networking Solut

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

The text is not completely clear on how the negotiation takes place. Its implicit, but not explicit.

SuggestedRemedy

insert "via L2 classification" at the end of both lines

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **65** *L* **43** # 201

Dove, Daniel — Dove Networking Solut

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

Minor editorial suggestion.

SuggestedRemedy

Insert "to be" between "is" and "2-pair"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **65** *L* **44** # 202

Dove, Daniel — Dove Networking Solut

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

Minor editorial suggestion.

SuggestedRemedy

Insert "to be" between "is" and "4-pair"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **66** *L* **24** # 203

Dove, Daniel — Dove Networking Solut

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

pwr_app_a is a variable only used by the Type 3 and Type 4 state diagram. Should it be declared as only applying to them. This raises a general question since there are two SDs but the variable list is singular. Should we break out Type 1 and Type 2 variables, Type 3 and Type 4, and common variables? Or leave them all mixed up?

SuggestedRemedy

I will leave this to the Task Force to decide. It affects a number of variables.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **66** *L* **54** # 204
Dove, Daniel Dove Networking Solut

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

The text in this sentence is incomplete or inaccurate.

SuggestedRemedy

Replace "POWER_UP[A]" with "the POWER_UP[A] or IDLE[A] states.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **67** *L* **1** # 205
Dove, Daniel Dove Networking Solut

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

The text in this sentence is incomplete or inaccurate.

SuggestedRemedy

Replace "POWER_UP[A]" with "the POWER_UP[A] or IDLE[A] states.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **67** *L* **2** # 206
Dove, Daniel Dove Networking Solut

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

The text in this sentence is incomplete or inaccurate.

SuggestedRemedy

Replace "POWER_UP[A]" with "the POWER_UP[A] or IDLE[A] states.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **65** *L* **5** # 207
Dove, Daniel Dove Networking Solut

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

The sentence reads unclearly. It is a state machine that is being communicated with not an alternative.

SuggestedRemedy

replace with "to the Alternative A State Machine that the Alternative B State Machine is between"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **67** *L* **7** # 208
Dove, Daniel Dove Networking Solut

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

The text in this sentence is incomplete or inaccurate.

SuggestedRemedy

Replace "POWER_UP[A]" with "the POWER_UP[A] or IDLE[A] states.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **67** *L* **8** # 209
Dove, Daniel Dove Networking Solut

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

The text in this sentence is incomplete or inaccurate.

SuggestedRemedy

Replace "POWER_UP[B]" with "the POWER_UP[B] or IDLE[B] states.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **67** *L* **8** # 210
Dove, Daniel Dove Networking Solut

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

The text in this sentence is incomplete or inaccurate.

SuggestedRemedy

Replace PSE with "A Type 1 or Type 2 PSE" since Type 3 and Type 4 use pwr_app_a/b?

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **70** *L* **16** # 211
Dove, Daniel Dove Networking Solut

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

While this was not changed from 802.3at, it appears that the definition of the values for both True and False are incorrect. They appear to be values for pse_dll_enabled rather than pse_dll_capable.

SuggestedRemedy

Insert correct definitions.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **70** *L* **23** # 212
Dove, Daniel Dove Networking Solut

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

A variable cannot probe.

SuggestedRemedy

replace "probe" with "indicate that the PSE is ready to probe"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **70** *L* **16** # 213
Dove, Daniel Dove Networking Solut

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

The text is not completely clear

SuggestedRemedy

replace "for Tlim within" with "for a time TLIM determined by"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **79** *L* **27** # 214
Dove, Daniel Dove Networking Solut

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

It will enable lower cost implementations if we allow staggering of detection for the dual-signature cases. Please see attached presentation.

SuggestedRemedy

See state diagram changes in bullock_01_3bt_1015 for detail, as I believe Chris addresses this in his presentation.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **79** *L* **27** # 215
Dove, Daniel Dove Networking Solut

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

Throughout the State Diagram, there are numerous connectors that run on-page. This is a question of style, but I believe it would be more readable if only off-page connectors are used and lines tying blocks together used on-page.

SuggestedRemedy

I will leave this to the Task Force to decide. It affects a number of connectors.Example: A is a connector that as an input to IDLE supports numerous off-page connections. For on-page, a line from each state combining together to a single return to A would be easier to follow.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **81** *L* **1** # 216
Dove, Daniel Dove Networking Solut

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

We need a connector name here. C1?

SuggestedRemedy

Add connector and ensure that it connects to all appropriate locations within State Diagram.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **81** *L* **18** # 217
Dove, Daniel Dove Networking Solut

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

The logic for this arc is located at the entry to the state rather than the exit. Is there a style convention here?

SuggestedRemedy

Follow style convention as it applies.I would presume the logic for exiting a state should go at the exit.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **81** *L* **20** # 218
Dove, Daniel Dove Networking Solut

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

Is there really a need for this state/arcs?The variable gets cleared in IDLE, then set down here. What if its set all the time?

SuggestedRemedy

There are three POWER_ON states (alt-A, alt-B, 4P) that all have this loop. Is it necessary? If not, remove.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **81** *L* **23** # 219
Dove, Daniel Dove Networking Solut

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

The logic for this state appears not to be as indicated in text. There are other issues about the logic in this state, but if we intend to leave it, I recommend changing it.

SuggestedRemedy

By the time a 4P SS arrives at POWER_ON, it has already powered all 4 pair and inrushed them. Is this really how we want this to work? This logic should be (dll_4PID=0) * (mr_pse_ss_mode=0) so that EITHER of these variables being 1 will lead to operation in 4P mode.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **83** *L* **13** # 220
Dove, Daniel Dove Networking Solut

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

Can't find pse_avail_pwr(a) defined. There is a PSE_avail_pwr but it doesn't appear to be defined on a pair-set basis, also CAPs rather than lower case.

SuggestedRemedy

Either add the variable where required or some text that articulates how this variable instance relates to PSE_available_power.same goes, for instance with pd_req_pwr(a) etc.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **86** *L* **6** # 221
Dove, Daniel Dove Networking Solut

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

The logic for the entry arc is not necessarily the same logic as the exit logic on other pages that lead into it.

SuggestedRemedy

I think striking the logic is fine. The other pages that feed into it should have logic on exit from prior states. Also, this states PSE > 2. Given that it's a Type 3 and Type 4 state machine, wouldn't this always be the case?

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **86** *L* **51** # 222
Dove, Daniel Dove Networking Solut

Comment Type **TR** *Comment Status* **X**
Exit Arc C is incorrect

SuggestedRemedy
Replace C with C1?

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **86** *L* **51** # 223
Dove, Daniel Dove Networking Solut

Comment Type **TR** *Comment Status* **X**
Exit Arc E is incorrect

SuggestedRemedy
Replace E with A?

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.6** *P* **92** *L* **25** # 224
Dove, Daniel Dove Networking Solut

Comment Type **TR** *Comment Status* **X**
There is a TBD in the text. This cannot persist into draft 2.0

SuggestedRemedy
This TBD will have to be removed prior to 2.0

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.5.1.2.2** *P* **161** *L* **38** # 225
Dove, Daniel Dove Networking Solut

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

SuggestedRemedy
Replace "pss_dll_enabled" with "pse_dll_enabled"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.6.3.5** *P* **169** *L* **12** # 226
Dove, Daniel Dove Networking Solut

Comment Type **TR** *Comment Status* **X**
Just observing that pse_dll_enabled not required on this arc? Is it possible that pse_dll_ready can be true while pse_dll_enabled is false?

SuggestedRemedy
address as appropriate.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.6.3.5** *P* **169** *L* **12** # 227
Dove, Daniel Dove Networking Solut

Comment Type **TR** *Comment Status* **X**
Just observing that pd_dll_enabled not required on this arc? Is it possible that pd_dll_ready can be true while pd_dll_enabled is false?

SuggestedRemedy
address as appropriate.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4** *P* **30** *L* **42** # 228
Dwelley, David Linear Technology

Comment Type **E** *Comment Status* **X**
End of Note 2: "(fix reference when finalized)" is sure to be forgotten

SuggestedRemedy
Fix reference to 33.2.7.4.1. Remove paranthetical note.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4** *P* **30** *L* **45** # 229

Dwelley, David Linear Technology

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

I believe the study of unbalance and temperature rise has been completed.

SuggestedRemedy

Remove editor's note.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4.2.1** *P* **32** *L* **3** # 230

Dwelley, David Linear Technology

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

33.1.4.2.1 just says "See Annex 33A", which also appears in 33.1.4.2.

SuggestedRemedy

Strike 33.1.4.2.1. Replace "within a twisted pair" with "for twisted pair cables" in 33.1.4.2. Fix ISO reference with newer reference that specs pair-to-pair balance. The editor's note in 33.1.4.2.1 can probably be removed as well.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4** *P* **42** *L* **1** # 231

Dwelley, David Linear Technology

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

Editor's note on page 65 line 1 covers this

SuggestedRemedy

Strike this editor's note.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.6** *P* **53** *L* **16** # 232

Dwelley, David Linear Technology

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

"When a Type 2 PSE powers a Type 2, Type 3 or Type 4 PD, the PSE may choose to assign a value of ‘1’ to parameter_type if mutual identification is not complete (see 33.2.6) and shall assign a value of ‘2’ to parameter_type if mutual identification is complete." This sentence and the subsequent sentences can be fixed by replacing the last "complete" with "successful".

SuggestedRemedy

Change "complete" to "successful" in three places. Strike the editor's note.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.6** *P* **53** *L* **32** # 233

Dwelley, David Linear Technology

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

This seems to imply that a Type 3/4 PSE shall only provide 2p power to a Type 1/2 PD: "When a PSE powers a PD of lower Type (TypePD) than its own native type (TypePSE), the PSE shall meet the PI electrical requirements of the PD Type (TypePD), except for ICon, ILIM-2P, IInrush, IInrush-2P, TLIM-2P, and PType (see Table 33–11), for which...". This goes against one goal of the bt project, which is to provide 4p power to existing Type 1 and 2 devices where possible.

SuggestedRemedy

Set the sentence in the positive: "A PSE shall meet the Icut-2p and Ihold requirements of the PD it is connected to." These are the only requirements in Table 33-11 I see that might affect this situation. Or strike the sentence - Icut is optional and the Ihold requirements are made clear in 33.2.9. Remove the editor's note.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **79** *L* **1** # 234

Dwelley, David Linear Technology

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

I think we got them all

SuggestedRemedy

Strike this editor's note.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **82** *L* **39** # 235

Dwelley, David Linear Technology

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

An active-balanced PSE needs no extra specs - it will act like a normal PSE with coincidently perfect balance and should meet all unbalance specs easily

SuggestedRemedy

Remove Note 3.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **82** *L* **42** # 236

Dwelley, David Linear Technology

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

Tlim_max is adequately described in 33.2.7.7: "Power shall be removed from the a pairset PI of a PSE before the pairset PI current exceeds the “PSE upperbound template” in Figure 33–14…"

SuggestedRemedy

Remove Note 4.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.5** *P* **85** *L* **45** # 237

Dwelley, David Linear Technology

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

Iinrush-2p should be Iinrush for all SS PDs (and DS single-load PDs if we define a way to identify them).

SuggestedRemedy

Change Iinrush-2p to Iinrush at lines 45, 47, and 49. Add a new sentence to the end of bullets a and b: "When connected to a DS PD, the minimum Iinrush specs apply to each pairset." Table 33-11 items 5 and 5a will need adjusting as well when we determine the final values for inrush.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.5** *P* **85** *L* **49** # 238

Dwelley, David Linear Technology

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

Iinrush-2p minimum doesn't allow for unbalance effects when connected to a single-load PD. One pairset may fail to meet the minimum requirement when an unbalanced load is connected.

SuggestedRemedy

Define Iinrush (minimum) as total current for SS PDs (and DS single-load PDs if we define a way to identify them). See presentation dwelley_3bt_xx_1015.pdf.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.5** *P* **86** *L* **6** # 239

Dwelley, David Linear Technology

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

Figure 33-13: The figure is described on line 26 as a template, but no minimum inrush current is shown. This could imply that the minimum inrush current is zero (especially since Figure 33-14 shows min and max).

SuggestedRemedy

Add a minimum line marked 0.40A(TBD), and adjust as needed based on agreement about Type 3 and 4 inrush levels (this may require adding extra figures as we did with Figure 33-14). Change "Iinrush-2p" labels to "Iinrush". Add a new sentence at the end of the section (after equation 33-5): "When connected to a DS PD, the Iinrush template applies to each pairset."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7** *P* **112** *L* **1** # 240

Dwelley, David Linear Technology

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

Note seems obsolete: item 4 no longer has values.

SuggestedRemedy

Strike this editor's note.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8** *P* **119** *L* **44** # 241

Dwelley, David Linear Technology

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

"Editor's Note: To add line for Type 1 and Type 2 dual-signature." Such PDs do not officially exist and must meet the same specs as T1/2 SS PDs.

SuggestedRemedy

Strike this editor's note.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.4.9** *P* **129** *L* **1** # 242

Dwelley, David Linear Technology

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

Section 33.1.4.1 is updated

SuggestedRemedy

Strike this editor's note.

Proposed Response *Response Status* **O**

Cl **25** *SC* **25.4.5** *P* **24** *L* **1** # 243

Schindler, Fred Seen Simply

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

Existing text,

"A receiver in a Type 2 or greater Endpoint PSE or Type 2 or greater PD (see Clause 33) shall meet the
requirements of 25.4.7. A transmitter in a Type 2 Endpoint PSE or Type 2 PD delivering or accepting more than 13.0 W average power shall meet either the Open Circuit Inductance (OCL) requirement in 9.1.7 of TPPMD, or meet the requirements of 25.4.5.1."

should be improved to clarify meaning and to include new Types.

SuggestedRemedy

"A 100BASE-TX
receiver in a Type 2 or greater Endpoint PSE or Type 2 or greater PD (see Clause 33) shall meet the
requirements of 25.4.7. A 100BASE-TX
transmitter in a Type 2 or greater
Endpoint PSE or Type 2 or greater
PD delivering or accepting more than 13.0 W average power shall meet either the Open Circuit Inductance (OCL) requirement in 9.1.7 of TPPMD, or meet the requirements of 25.4.5.1."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.1** *P* **27** *L* **53** # 244

Schindler, Fred
Seen Simply

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

Existing text does not cover new types. Legacy text repeats (introduces) cabling requirements. Text covering 10-GBASE-T points to another Clause to get channel requirements. All other PHY data rates place channel requirements for power over DTE in Clause 33. Unnecessary text may confuse the reader.

"Type 1 operation adds no significant requirements to the cabling. Type 2 operation requires ISO/IEC 11801:1995 Class D or better cabling, and a derating of the cabling maximum ambient operating temperature. The clause does not address the operation of 10GBASET.
For 10GBASE-T operation, the channel model specified in Clause 55 needs to be met without regard to DTE Power via MDI presence or operation."

SuggestedRemedy

Replace text with the following,

"Type 1 operation adds no significant requirements to the cabling. Cable requirements for all PSEs are covered in 33.1.4."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4** *P* **30** *L* **9** # 245

Schindler, Fred
Seen Simply

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

The Task Force should discuss the sentence,
"The power system is defined by the lowest Type of PSE or PD in a system and has certain basic parameters defined according to Table 33-1. "

The text permits PSEs that can provide class-8 power levels to by be considered class 1 when connected to a PD consuming class 1 power. This permits CAT-3 cabling to be used. This results in a cable power dissipation increase of about 230x, which is about 9x more channel loss than a Type-1 system permits. This comment is related to another comment marked with CONCERN1.

SuggestedRemedy

Change how the power system is defined so that cabling requirements are dictated by,
1.The maximum class power the PSE Type can provide, or
2.The maximum class power the PSE can provide.
The first choice is preferred because users may select PSEs based on Type because historically this has been the case.

Replace the called-out sentence with,
"The power system is defined by the highest power class allowed for the Type of PSE in a system and has certain basic parameters defined according to Table 33-1. "

Or

"The power system is defined by the highest power class of the PSE in a system and has certain basic parameters defined according to Table 33-1. "

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4** *P* **30** *L* **18** # 246

Schindler, Fred Seen Simply

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

Table 33-1 no longer represents system power levels correctly because Type 4 PSEs may provide class 1 to 8 power levels. Note this concern is related to a comment marked with CONCERN1. This comment may be OBE by another comment marked by CONCERN1 (three comments total).

SuggestedRemedy

Replace Type with the highest power class permitted with the referenced cable system. This results in these changes,

1.Replace Table 33-1 title with "System power parameters Vs PSE Class Power"
2.Replace Table 33-1 column one title "System Type (Lowest type of PSE and PD)" with "System Power Limit (PSE class)"
3.Type 1 becomes Class 3 or 0.
4.Type 2 becomes Class 4.
5.Type 3 becomes Class 5 and 6.
6.Type 4 becomes Class 7 and 8.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.0a** *P* **32** *L* **33** # 247

Schindler, Fred Seen Simply

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

Normative text is not present. The existing text is,

"PSEs can be categorized as either Type 1, Type 2, Type 3, or Type 4 PSEs. Table 33-1a shows the
permissible PSE types along with supported parameters."

SuggestedRemedy

Replace the text with,

"PSEs can be categorized as either Type 1, Type 2, Type 3, or Type 4 PSEs. PSEs shall meet one or more of the PSE Type requirements provide in Table 33-1a."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5** *P* **87** *L* **37** # 248

Schindler, Fred Seen Simply

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

Clause reference 33.2.7.1 is not a hyperlink.

SuggestedRemedy

Use a hyperlink.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **101** *L* **14** # 249

Schindler, Fred Seen Simply

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

Clause reference 33.2.7.1 is not a hyperlink.

SuggestedRemedy

Use a valid hyperlink.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.7** *P* **109** *L* **5** # 250

Schindler, Fred Seen Simply

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

The text is should be normative.
"Equation (33-6), Equation (33-7) and Figure 33-14 apply to PSEs that operate in 2-pair mode, as well as to Type 3 and Type 4 PSEs connected to dual-signature PDs. Equation (33-6a), Equation (33-7a) and Figure 33-14a apply to Type 3 PSEs connected to single-signature PDs, operating in 4-pair mode. Equation (33-6b), Equation (33-7b) and Figure 33-14b apply to Type 4 PSEs connected to single-signature PDs, operating in 4-pair mode."

SuggestedRemedy

Replace the text with,

"Equation (33-6), Equation (33-7) and Figure 33-14 shall
apply to PSEs that operate in 2-pair mode, as well as to Type 3 and Type 4 PSEs connected to dual-signature PDs. Equation (33-6a), Equation (33-7a) and Figure 33-14a shall
apply to Type 3 PSEs connected to single-signature PDs, operating in 4-pair mode. Equation (33-6b), Equation (33-7b) and Figure 33-14b shall
apply to Type 4 PSEs connected to single-signature PDs, operating in 4-pair mode."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.7** *P* **87** *L* **12** # 251

Schindler, Fred Seen Simply

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

The existing text,
" When connected to a single signature PD, a Type 3 or Type 4 PSE should (TBD) remove power from both pairsets before the current exceeds the "PSE upperbound template" on either pairset."
provides unnecessary guidance. The prior sentence,
"Power shall be removed from a pairset of a PSE before the pairset current exceeds the "PSE upperbound template" ...."
provides requirement.

On pages 100 to 101,
"Power may be removed from both pairsets any time power is removed from one pairset. Editor's Note: All other instances of the above statement to be removed from draft. If commentators find
any please comment against them." The first sentence called out in this comment is fits the concern expressed in the Editor's note.

The requirement in this section prevents one or both of the pairsets from crossing the PSE upperbound template. Concerns about delays in turning off one pairset then a second pairset may not warranted because the device connected to the PSE is no longer considered a PD. Having the ability to control pairsets individually permits system providers to build systems capable of removing power from a fault while still providing power on a nonfaulting pairset.

SuggestedRemedy

Strike the sentence,
" When connected to a single signature PD, a Type 3 or Type 4 PSE should (TBD) remove power from both pairsets before the current exceeds the "PSE upperbound template" on either pairset."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.11** *P* **91** *L* **22** # 252

Schindler, Fred Seen Simply

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

The text,
"Type 2, Type 3 and Type 4 Endpoint PSEs shall meet the requirements of 25.4.5 in the presence of (Iunb / 2)."

Should be restricted to 100BASE-T operation.

SuggestedRemedy

Replace the sentence with,
"A 100BASE-TX transmitter in a
Type 2, Type 3 and Type 4 Endpoint PSEs shall meet the requirements of 25.4.5 for in the presence of (Iunb / 2)."

Proposed Response *Response Status* **O**

Cl **79** *SC* **79.3.2.6b** *P* **13** *L* **48** # 253

Schindler, Fred Seen Simply

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

Correct text, "PD 4PID".

SuggestedRemedy

Replace this text with, "PD 4P-ID".

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.2** *P* **97** *L* **5** # 254

Schindler, Fred — Seen Simply

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

The modified legacy text exists to require PDs to provide an indication of under power. Unfortunately, the power level at which this is possible is not precisely called out. Ideally, the indicator should operate at the lowest PSE power class-1 level.

"A Type 2, Type 3 or Type 4 PD that does not successfully observe a Multiple-Event Physical Layer
classification or Data Link Layer classification shall conform to Type 1 PD power restrictions and shall
provide the user with an active indication if underpowered. The method of active indication is left to the
implementer."

SuggestedRemedy

Change the sentence to,
"A Type 2, Type 3 or Type 4 PD that does not successfully observe a Multiple-Event Physical Layer
classification or Data Link Layer classification shall conform to Type 1 PD power restrictions and shall
provide the user with an active indication if underpowered. The method of active indication is left to the
implementer.

Type 3 or Type 4 PDs shall provide the active indication while operating within PD power class 1."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **44** *L* **7** # 255

Schindler, Fred — Seen Simply

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

Variable PD_4pair_cand on page 66 and PD_4pair_candidate on page 67 appear to be for the same purpose. Neither variable is used.

SuggestedRemedy

1)Delete both variables and replace one of them with an Editors that reads,
Editor's Note: Task force members that want a physical means for determining whether a legacy PD may be powered on both pairsets should provide a solution.

OR

2)Use only variable PD_4pair_candidate as this variable is used on page 92.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.6** *P* **52** *L* **5** # 256

Schindler, Fred — Seen Simply

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

The text on lines 5 and 19,
"valid: The PSE has detected a PD requesting power."

Should correctly describe what a PSE has completed.

SuggestedRemedy

Replace text called out on line 5 and line 19 with,

"valid: The PSE has detected a valid PD detection signature."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.3** *P* **88** *L* **43** # 257

Schindler, Fred — Seen Simply

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

The units of Pac_margin and PAutoclass appear to be Watts but this is not called out. These variables are used in the formula above their description.

SuggestedRemedy

Call out Watts by adding the following text before the period on line 44,
", both variables are in Watts."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.6.3.1** *P* **142** *L* **14** # 258

Schindler, Fred Seen Simply

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

Clarify values used for PD_DLL_MAX_VALUE, PD_INITIAL_VALUE, and PSE_INITIAL_VALUE.

SuggestedRemedy

After the variable PSE_INITIAL_VALUE description (line 3 on page 165) add, "Variables PD_DLL_MAX_VALUE, PD_INITIAL_VALUE, and PSE_INITIAL_VALUE, round up values to provide margin. Additional information on power levels for classes 6 and 8 may be found at 33.3.7.2.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.11a** *P* **91** *L* **35** # 259

Schindler, Fred Seen Simply

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

The input average current has been calculated with at least a 1 second window for the Type 1 and 2. It does not make sense to change the window to 4 seconds for Type 4, which increase the energy transferred when the PSE is providing power at the highest power level possible in this clause.

SuggestedRemedy

Have the Task Force discuss this. The preferred solution is to use a sliding window size of 1 second.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.11** *P* **91** *L* **33** # 260

Schindler, Fred Seen Simply

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

Type-4 PSEs, optimize power transferred to the PD by, using a fixed polarity, a higher supply voltage than other PSE Types, and provide 4-pair-only operation. The sentence,

"Type 4 PSEs are not required to support PType if they are restricted to Class 7 power or lower."

permits Type-4 PSEs to limit output power to class levels 1 to 7. Levels 1 to 6 are already provided by Type 1, 2, and 3, PSEs.

This allowance introduces interoperability issues and adds unnecessary complexity when describing a system to customers or when providing requirements for a specification (see another comment market CONCERN1). Very little system power optimization benefit is provided. For example, a Type-4 PSE providing 25.5W to a PD attached with 30 m of CAT-5e requires 25.97W. The same transfer requires 26.01W from a 4-pair Type-3 PSE. This performance difference is not visible when using three significant digits used within this specification. Note that a Type-3 PSE can have identical performance to a Type-4 PSE when their voltage levels match.

Legacy systems may be described using Type, which covers system power levels, and the cable infrastructure required. A Type-2 PSE powered a Type-2 PD. The added sentence introduces six Type-4 PSEs that will not power a Type-4 class-7 or 8 PD. The cable infrastructure for Type-4 systems needs to be determined using class power levels, which results in three different cabling infrastructures for Type-4 PSEs.

SuggestedRemedy

Strike the referenced sentence, which results in Type-4 PSE providing class-7 or 8 power limits. This restores previous conventions and removes many cases that result in interoperability issues. This restriction also increases the likelihood that computer networks can co-exist with networks used to power lighting.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **68** *L* **27** # 261

Schindler, Fred — Seen Simply

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

Variable mr_pse_alternative provides values, A, B, and BOTH, to indicate which PSE Alternative is used. The Task Force needs to decide whether all 2-mosfet PSES drive ALT-A when only one pairset is driven on a PSE that supports BOTH pairsets.

SuggestedRemedy

Recommend using a default of ALT-A for the case called out. This solution is used in the comment marked CONCERN2.

Modify the existing text, on line 31, to provide this informative guidance,
Values: A: The PSE uses PSE pinout Alternative A, which is also the default pinout when one pairset is driven on a PSE that supports BOTH pairsets.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **59** *L* **5** # 262

Schindler, Fred — Seen Simply

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

The POWER_UP block (where in-rush occurs) should check that 4-pair power is permissible. This is also required at block POWER_ON (where power is stable). A solution provided in a comment marked CONCERN2 is used to deal with the case when a PSE is not allowed to power on both pairsets. This approach mirrors what the existing state diagram does in POWER_ON. The solution also fixes POWER_ON block so that both pairsets are used when the PSE provides this option.

POWER_UP
IF (mr_pse_alternative = a) THEN
alt_a_pwrd <= TRUE

IF (mr_pse_alternative = b) THEN
alt_b_pwrd <= TRUE

IF (sig_type = single) THEN
alt_a_pwrd <= TRUE
alt_b_pwrd <= TRUE

POWER_ON
IF (sig_type = single) THEN
IF(dll_4PID = 0) +
(mr_pse_ss_mode = 0)) THEN
alt_a_pwrd <= TRUE
alt_b_pwrd <= FALSE
ELSE
alt_a_pwr <= TRUE
alt_b_pwr <= TRUE

IF(mr_PSE_alternative = a) THEN
alt_a_pwrd <= TRUE

IF(mr_PSE_alternative = b) THEN
alt_b_pwrd <= TRUE

SuggestedRemedy

POWER_UP
IF (mr_pse_alternative = a) THEN
alt_a_pwrd <= TRUE

IF (mr_pse_alternative = b) THEN
alt_b_pwrd <= TRUE

IF (((sig_type = single) *

(dll_4PID = 1)) * (mr_pse_alternative = BOTH)))
THEN
alt_a_pwrd <= TRUE
alt_b_pwrd <= TRUE
ELSE
alt_a_pwrd <= TRUE

POWER_ON
IF (sig_type = single) THEN
IF(dll_4PID = 0) +
(mr_pse_ss_mode = 0)) THEN
alt_a_pwrd <= TRUE
alt_b_pwrd <= FALSE
ELSE
IF(mr_PSE_alternative = BOTH) THEN
alt_a_pwr <= TRUE
alt_b_pwr <= TRUE

IF(mr_PSE_alternative = a) THEN
alt_a_pwrd <= TRUE

IF(mr_PSE_alternative = b) THEN
alt_b_pwrd <= TRUE

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **57** *L* **7** # 263

Schindler, Fred Seen Simply

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

TEST_MODE
IF (mr_force_pwr_a) THEN
Alt_a_pwrd <= TRUE
IF (mr_force_pwr_b) THEN
Alt_b_pwrd <= TRUE

The TEST_MODE block exit does not facilitate one ALT having a fault while the other is functioning.

SuggestedRemedy

Break the existing test,

(mr_pse_enable = force_power)*(ovld_det_a + short_det_a+ ovld_det_b + short_det_b)

Into two, one path that
(mr_pse_enable = force_power)*(ovld_det_a + short_det_a)

That goes to a block,

TEST_ERROR_A
Alt_a_pwrd <= FALSE

Exit the block as was the case in TEST_ERROR.

And another path that
(mr_pse_enable = force_power)*(ovld_det_b + short_det_b)

That goes to a block,

TEST_ERROR_B
Alt_b_pwrd <= FALSE

Exit the block as was the case in TEST_ERROR.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.0a** *P* **33** *L* **1** # 264

Stover, David — Linear Technology

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

Link to 33.3.8 not valid

SuggestedRemedy

Add hyperlink

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **45** *L* **10** # 265

Stover, David — Linear Technology

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

Two versions of the same variable are present, PD_4pair_cand and PD_4pair_candidate. "cand" is used by SD, "candidate" is used in 33.2.5.6, 4PID requirements.

SuggestedRemedy

Pick a single name and definition. Correct outdated references to whichever name is removed.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **57** *L* **5** # 266

Stover, David — Linear Technology

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

Mixed use of e.g., "alt_a_pwrd" and "alt_pwrd(a)" for inspecting if a particular alt is powered, but only "alt_a/b_pwrd" variables are defined.

SuggestedRemedy

Defer to PSE SD developer. If there exists a distinction, define "alt_pwrd()". Else, revise SD to use "alt_a/b_pwrd" nomenclature.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **57** *L* **16** # 267

Stover, David — Linear Technology

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

Mixed use of e.g., "pwr_app(a)" and "pwr_app_a" for inspecting if power is applied to a particular alt, but only "pwr_app_a/b" variables are defined.

SuggestedRemedy

Defer to PSE SD developer. If there exists a distinction, define "pwr_app()". Else, revise SD to use "pwr_app_a/b" nomenclature.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.0a** *P* **66** *L* **35** # 268

Stover, David — Linear Technology

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

Paragraph is indented

SuggestedRemedy

Remove indentation

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5** *P* **105** *L* **46** # 269

Stover, David — Linear Technology

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

Typo

SuggestedRemedy

Replace "PD's" with "PDs"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.6.3.3** *P* **145** *L* **10** # 270

Stover, David Linear Technology

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

pse_power_type has since been renamed to pse_power_level in Figure 33-16 and supporting text

SuggestedRemedy

Rename pse_power_type to pse_power_level

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.6.3.5** *P* **148** *L* **9** # 271

Stover, David Linear Technology

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

pse_power_type has since been renamed to pse_power_level in Figure 33-16 and supporting text

SuggestedRemedy

Rename pse_power_type to pse_power_level

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.8.3.3** *P* **161** *L* **5** # 272

Stover, David Linear Technology

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

pse_power_type has since been renamed to pse_power_level in Figure 33-16 and supporting text

SuggestedRemedy

Rename pse_power_type to pse_power_level

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.8.3.3** *P* **161** *L* **36** # 273

Stover, David Linear Technology

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

pse_power_type has since been renamed to pse_power_level in Figure 33-16 and supporting text

SuggestedRemedy

Rename pse_power_type to pse_power_level

Proposed Response *Response Status* **O**