Cl **00** *SC* **0** *P* *L* # 162

Stover, David — Linear Technology

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

TDL D2.0 #513 - System Unbalance Requirements

SuggestedRemedy

See paul_01_1116.pdf

Proposed Response *Response Status* **O**

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

Anslow, Pete — Ciena

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

The "Draft 2.1 difference to Draft 2.0 compare file " only contains changes to Clause 33 and does not show changes to the rest of the draft. This makes the work of reviewing the changes made to the draft much more onerous for the reviewers.

SuggestedRemedy

Include all of the draft in the compare file.

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **0** *L* **30** # 124

Schindler, Fred — Seen Simply, Cisco, T

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

Table 79–9 'IEEE 802.3 Organizationally Specific TLV/LLDP Local System Group managed object class cross references' lists a number of new attributes in the 'LLDP Local System Group managed object class attribute' column for the 'Power via MDI' TLV that have not been defined in Clause 30, Table 30-4 "DTE Power MDI capabilities" in oPSE maaged objects class (30.9.1).

SuggestedRemedy

Locate a subject matter expert (not the commentor) to evaluate this and provide the appropriate comments to complete the called out section.

Add row with column values, aPSEPowerPairsx, ATTRIBUTE, GET-SET, X in column "PSE Basic Package (mandatory)".

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **1** *L* **1** # 99

Jones, Chad — Cisco

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

Within 802.3 it is obvious that when numeric values are transmitted or accessed through management objects, binary encoding is used. It is pervasive across the standard. There is no need to state that.
What is needed is a description of what is being trasmitted by the bits.
This is a comment to address my TDL items from D2.0, specifically comments 63, 64, and 67.

SuggestedRemedy

see jones_01_1116.pdf for a complete list of locations and remedies.

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **3** *L* **23** # 3

Anslow, Pete — Ciena

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

The draft does not use the latest frontmatter from the 802.3 FrameMaker template.
For example "A full duplex MAC protocol was added in 1997. " is missing and "IEEE Std 802.3 is comprised of the following …" should be "IEEE Std 802.3 is composed of the following ..."

SuggestedRemedy

Update the frontmatter to the latest version.

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **5** *L* **1** # 4

Anslow, Pete — Ciena

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

802.3bn and 802.3bz are now approved.

SuggestedRemedy

Change "IEEE Std 802.3bn™-20xx" to "IEEE Std 802.3bn™-2016"
Change "IEEE Std 802.3bz™-20xx" to "IEEE Std 802.3bz™-2016"

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **5** *L* **20** # 284

Yseboodt, Lennart Philips

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

IEEE Std 802.3bt-20xx is described as:
"... provision of power via a single twisted pair to connected Data Terminal Equipment 2 (DTE) with IEEE 802.3 interfaces."

Seems like a spurious "2" after Equipment.

SuggestedRemedy

Remove "2".

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **5** *L* **30** # 285

Yseboodt, Lennart Philips

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

The description of IEEE Std 802.3bt-20xx in the frontmatter seems rather incomplete.

SuggestedRemedy

Replace by:
Amendement 10 --- This amendement changes IEEE Std 802.3-2015 and replaces Clause 33.
This amendement adds power delivery using all four pairs in the structured wiring plant, resulting in greater power being available to end devices. This amendement also allows for lower standby power consumption in end devices and adds a mechanism to better manage the available power budget.

Proposed Response *Response Status* **O**

Cl **33** *SC* **Annex A** *P* **10** *L* **257** # 133

Shariff, Masood CommScope

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

Need to correct the title of TIA TSB-184-A. This TSB is a standalone document, not an addendum.

SuggestedRemedy

Change:Addendum Guidelines for Supporting Power Delivery over Balanced Twisted-Pair Cabling.

To:
Guidelines for Supporting Power Delivery Over Balanced Twisted-Pair Cabling

This is a global change (also page 20 line 11,

Proposed Response *Response Status* **O**

Cl **FM** *SC* **FM** *P* **19** *L* **13** # 1

Abramson, David Texas Instruments

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

"devices or networks. implement-"

SuggestedRemedy

Capitalize the start of a sentence. "devices or networks. Implement-"

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4** *P* **20** *L* **15** # 170

Yseboodt, Lennart — Philips

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

These are the definitions for Type 1/2 PSE/PD in the base standard:
- 1.4.415 Type 1 PD: A PD that does not provide a Class 4 signature during Physical Layer classification (see IEEE 802.3, Clause 33).
- 1.4.416 Type 1 PSE: A PSE that supports only a Type 1 PD (see IEEE 802.3, Clause 33).
- 1.4.417 Type 2 PD: A PD that provides a Class 4 signature during Physical Layer classification, understands 2-Event classification, and is capable of Data Link Layer classification (see IEEE 802.3, Clause 33).
- 1.4.418 Type 2 PSE: A PSE that supports both a Type 1 and a Type 2 PD (see IEEE 802.3, Clause 33).

These definitions don't align well with our Type 3 and Type 4 definitions.

SuggestedRemedy

Proposed revision:
- Type 1 PD: A PD that requests Class 0 to Class 3 during Physical Layer classification.
- Type 1 PSE: A PSE that supports up to Class 3 power levels and provides power over 2-pair.
- Type 2 PD: A PD that requests Class 4 during Physical Layer classification, supports Multiple-Event Classification and Data Link Layer Classification.
- Type 2 PSE: A PSE that supports up to Class 4 power level and provides power over 2-pair.

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4.381a** *P* **20** *L* **35** # 5

Anslow, Pete — Ciena

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

"single-signature PD" comes before "1.4.381a single twisted-pair copper cable" as inserted by 802.3bp according to the rules in:
http://www.ieee802.org/3/WG_tools/editorial/requirements/words.html#sort
This means that the subclause number should be 1.4.381aa as per comment #165 against D2.0 (comment #136 was incorrect in this regard).

SuggestedRemedy

Change the editing instruction to:
"Insert 1.4.381aa before 1.4.381a "single twisted-pair copper cable" (as inserted by IEEE Std 802.3bp-2016) as follows:
Renumber the new definition to 1.4.381aa

Proposed Response *Response Status* **O**

Cl **1** *SC* **1.4** *P* **20** *L* **43** # 157

Stover, David — Linear Technology

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

Definition of Type 3 PD does not include "is capable of Data Link Layer classification", as Type 4 PD does. However, DLL is mandatory for both Type 3 and Type 4 PDs.

SuggestedRemedy

Change:
"A PD that requests Class 1 to Class 6 during Physical Layer classification, implements Multiple-Event classification, and accepts power on both Modes simultaneously."
To:
"A PD that requests Class 1 to Class 6 during Physical Layer classification, implements Multiple-Event classification, is capable of Data Link Layer classification, and accepts power on both Modes simultaneously."

Proposed Response *Response Status* **O**

Cl **30** *SC* **30** *P* **24** *L* **1** # 53

Darshan, Yair — Microsemi

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

All new TLVs need to be added to this section. This include Autoclass and Measurements.
(See comment #286 in D2.0)

SuggestedRemedy

If not resolved yet for D2.1, add it to the TDL for the next draft.

Proposed Response *Response Status* **O**

Cl **00** *SC* **0** *P* **24** *L* **30** # 125

Schindler, Fred — Seen Simply, Cisco, T

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

Table 79–9 'IEEE 802.3 Organizationally Specific TLV/LLDP Local System Group managed object class cross references' lists a number of new attributes in the 'LLDP Local System Group managed object class attribute' column for the 'Power via MDI' TLV add to Clause 30 are not complete.

SuggestedRemedy

Presentation schindler_01_1116 provides a marked up Clause 30 with proposed solutions.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.9.1.2.1** *P* **30** *L* **47** # 6

Anslow, Pete Ciena

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

The changes in 30.9.1.2.1 have no corresponding editing instruction

SuggestedRemedy

Add an appropriate editing instruction

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.2.1.14** *P* **34** *L* **50** # 52

Darshan, Yair Microsemi

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

"aLldpXdot3LocPowerType" There is no value for Type 3 or Type 4.
(See comment #490 in D2.0)

SuggestedRemedy

If not resolved yet for D2.1, add it to the TDL for the next draft.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.2.1.18aa** *P* **36** *L* **4** # 7

Anslow, Pete Ciena

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

the inserted clause numbering does not conform with the rules in:
http://www.ieee802.org/3/WG_tools/editorial/requirements/words.html#numb
"The character ".z" is followed by ".z1", ".z2", and so on."

SuggestedRemedy

In the editing instruction, change "30.12.2.1.18a through 30.12.2.1.18ad" to "30.12.2.1.18a through 30.12.2.1.18z4"
renumber 30.12.2.1.18aa through 30.12.2.1.18ad to be 30.12.2.1.18z1 through 30.12.2.1.18z4

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.2.1** *P* **36** *L* **6** # 171

Yseboodt, Lennart Philips

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

30.12.2.1.18a through 30.12.2.1.18d are remnants of older PSE/PD voltage and current measurement text for LLDP.

SuggestedRemedy

Remove these sections.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.2.1.18a** *P* **36** *L* **15** # 291

Zimmerman, George CME Consulting, Aqua

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

Table 79-7f doesn't exist. I think this is refering to Table 79-7b (PD measurements), occurs two times (lines 15, 28)

SuggestedRemedy

Change Table 79-7f cross reference to 79-7b in both occurances

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.2.1.18a** *P* **36** *L* **16** # 104

Jones, Chad Cisco

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

clicking Table 79-7f takes me to Table 79-7b. Likewise for Table 79-7g on 41 takes me to 79-7c

SuggestedRemedy

page 36 line 16 and 29 change 79-7f to 79-7b.
Page 36 line 40 and 52 change 79-7g to 79-7c.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.2.1.18c** *P* **36** *L* **40** # 292

Zimmerman, George — CME Consulting, Aqua

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

Table 79-7g doesn't exist. I think this is refering to Table 79-7c (PSE measurements), occurs two times (lines 40, 52)

SuggestedRemedy

Change Table 79-7g cross reference to 79-7c in both occurances

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.1** *P* **43** *L* # 63

Darshan, Yair — Microsemi

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

(TDL #171)
This comment is about addressing the significant digits for the numbers/equations/constant in the standard and try to be satisfied with 3 significant digits unless it violates the accuracy required for equations result and not cause system over design.

SuggestedRemedy

Adopt darshan_15_1116.pdf if available. If not available keep this in the TDL.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.3.1.18aa** *P* **44** *L* **44** # 8

Anslow, Pete — Ciena

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

the inserted clause numbering does not conform with the rules in:
http://www.ieee802.org/3/WG_tools/editorial/requirements/words.html#numb
"The character ".z" is followed by ".z1", ".z2", and so on."

SuggestedRemedy

In the editing instruction, change "30.12.3.1.18a through 30.12.3.1.18g" to "30.12.3.1.18a through 30.12.3.1.18z4"
renumber 30.12.3.1.18aa through 30.12.3.1.18ad to be 30.12.3.1.18z1 through 30.12.3.1.18z4

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.3.1** *P* **44** *L* **47** # 172

Yseboodt, Lennart — Philips

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

30.12.3.1.18a through 30.12.3.1.18d are remnants of older PSE/PD voltage and current measurement text for LLDP.

SuggestedRemedy

Remove these sections.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.3** *P* **53** *L* **20** # 9

Anslow, Pete — Ciena

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

1.2.6 says: "Unless otherwise stated, numerical limits in this standard are to be taken as exact, with the number of significant digits and trailing zeros having no significance."
This means that a parameter maximum of 0.1 has exactly the same meaning as a maximum of 0.100.
The new text in 33.1.3 says "Leading and trailing zeros have significance".
A leading zero would be 0100 rather than 100. As far as I can see, the only leading zeros in the draft are in front of the decimal point for numbers less than 1 (as per the IEEE style manual). What significance do these leading zeros have?
There are many trailing zeros in the draft, for example the Channel pairset maximum DC loop resistance for Type 1 is "20.0" ohms. Following 1.2.6, this would be a limit of exactly 20 ohms. 33.1.3 says that the single trailing zero has significance, but it is entirely unclear what significance it has. Does it mean that a resistance of 20.049 is compliant? (This was the assumption that some people were making that led to the introduction of 1.2.6.)
If the answer is that no value above 20 ohms is compliant, then 33.1.3 should not state that trailing zeros have significance and all trailing zeros should be removed from Clause 33.
If the answer is that the trailing zero modifies the limit away from exactly 20 ohms, then 33.1.3 has to be modified to state what the significance of the trailing zeros is.
In summary: either remove trailing zeros or if they are retained, state what they mean.

SuggestedRemedy

Either:
Remove the statement "Leading and trailing zeros have significance" from 33.1.3 and remove all trailing zeros from Clause 33 in the draft.
Or:
Modify 33.1.3 to state what the significance of leading and trailing zeros is.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4** *P* **53** *L* **51** # 47

Darshan, Yair Microsemi

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

The note below Table 33-1:
"NOTE-In Type 3 and Type 4 operation, the current per pairset may be impacted by pair-to-pair system resistance unbalance. See 33.2.8.4.1. For additional information on Type 4 current unbalance, see TIA TSB-184-A and ISO/IEC TR 29125 Edition 2."
The note below Table 33-1 need some clarification. It looks like that in 4-pair operation Icable can't be e.g. >0.6A.

SuggestedRemedy

Add the following text to 33.2.8.4.1 on page 120 after line 35:
"Icable in Table 33-1 is defined for 100% pair-to-pair balanced operation where the total 4-pair current for Type 3 and Type 4 is 2xIcable. In Type 3 and Type 4 operation over 4-pairs, the current per pairset may be impacted by end to end pair-to-pair system resistance unbalance which may cause Icable on one of the pairs of the pairs with the same polarity to be higher per the limits of Icon-2P_unb in Table 33-19 while the other pair will get to value lower than Icable resulting with total 2xIcable over a single 4-pair cable."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4** *P* **53** *L* **54** # 132

Shariff, Masood CommScope

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

ISO TR 29125 is now elevated to a TS or technical specification containing not only guidelines but requirements with the title INFORMATION TECHNOLOGY – TELECOMMUNICATIONS CABLING REQUIREMENTS
FOR REMOTE POWERING OF TERMINAL EQUIPMENT

Accordingly the references to it need to be updated

SuggestedRemedy

Change ISO/IEC TR 29125 to ISO/IEC TS 29125 globally (also page 54 line 38) in draft 2.1

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4.1** *P* **54** *L* **10** # 173

Yseboodt, Lennart Philips

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

We list a number of key parameters and their description in this section. Rch is missing.

SuggestedRemedy

Add the following before the Rchan description:
"Rch is the highest DC pairset loop resistance.
The supported value of Rch depends on the PSE Type and is defined in Table 33-1."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4** *P* **54** *L* **11** # 174

Yseboodt, Lennart Philips

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

"R Chan is the actual DC loop resistance from the PSE PI to the PD PI and back."

The text explains a couple paragraphs back that 'DC loop resistance' is a term used in the cable standards, which doesn't match our numbers.

So we need to avoid using this term here.
We also need to sync that to the Rchan-2P definition.

SuggestedRemedy

"R Chan is the actual resistance from the PSE PI to the PD PI and back."

Change Rchan-2P to:
"R Chan-2P is the actual pairset resistance from the PSE PI to the PD PI and back."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.3** *P* **54** *L* **16** # 85

Jones, Chad Cisco

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

this is a follow up to comment #6 against D2.0 which is filed on behlaf of maintenance (MR1278).
That comment called for Iport, Vpd and Vpse to be reomved from the definitions and moved to an appropiate section, suggesting 33.1.3. Vpd and Vpse now appear in 33.1.3 but not Iport. In fact, if you search the doc, Iport doens't make an appearance until 33.2.5.4 - before it is defined. This appearance does point to 33.2.8.6, which is overload current. Here Iport-2P is defined but after having been used nearly 30 times in the doc. Why did the definition for Iport not get added to 33.1.3?

SuggestedRemedy

add the definition for Iport (Iport-2P) to 33.1.3.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4.1** *P* **54** *L* **35** # 138

Shariff, Masood CommScope

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

The ambient temperature is not of the cable, but of the air surrounding the cable. This is an important distinction that affects many users including requlations and other standards, so we need to be correct and consistent.

The cable reaches a steady state operating temperature that is higher than the ambient temperature with the heat generated equal to the heat dissipated.

SuggestedRemedy

Change: maximum ambient operating temperature of the cable

To: maximum ambient temperature

Change also on line 36 and 37 below line 35 of page 54

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4.1** *P* **54** *L* **54** # 10

Anslow, Pete Ciena

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

As pointed out by Comment #172 against D2.0, "Annex A" in footnote 1 should be a cross-reference

SuggestedRemedy

Make it a cross-reference

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.1** *P* **55** *L* **25** # 158

Stover, David Linear Technology

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

Accepted remedy in Comment #11 against D2.0 was not fully implemented in D2.1.

SuggestedRemedy

Add a superscript "1" to column headings "Physical Layer Classification" and "Data Link Layer Classification".

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4** *P* **63** *L* **37** # 159

Stover, David Linear Technology

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

Comment #496 against D2.0 was implemented incorrectly.

SuggestedRemedy

Move "in legacy systems, such as 10BASE-T and 100BASE-TX" to the end of the sentence beginning with "Therefore, Alternative A matches the positive voltage…"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.1** *P* **64** *L* **17** # 175

Yseboodt, Lennart Philips

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

"The polarity of PSE voltages during its operating states (Detection, Connection Check, Classification, Power up and Power on) is the same as was used in the Detection state and defined per Table 33-3 in 33.2.4."

Why use Capital letters for the operating states? Also comma before "and" is missing.

SuggestedRemedy

Change to:
"The polarity of PSE voltages during its operating states (detection, connection check, classification, power up, and power on) is the same as was used in the detection state and defined per Table 33-3."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.1** *P* **64** *L* **64** # 160

Stover, David Linear Technology

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

Comment #497 against D2.0 was implemented incorrectly.

SuggestedRemedy

Make all entries in parenthesis "(Detection, Connection Check, Classification…" lower case.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.4** *P* **66** *L* **6** # 176

Yseboodt, Lennart Philips

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

Legacy state diagram, variable error_condition, refers to wrong Figures:
"These error conditions are different from those monitored by the state diagrams in Figure 33-21, Figure 33-22, and Figure 33-23."

SuggestedRemedy

Change to:
"These error conditions are different from those monitored by the state diagrams in Figure 33-14."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.7** *P* **72** *L* **24** # 112

Schindler, Fred Seen Simply, Cisco, T

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

The legacy state diagram (page 72) and the Type 3 and 4 state diagram (page 91) and text do not match for the behavior for the processing time of the tdbo_timer cover in text on page 105 line 21. Legacy text indicates, “If a PSE that is performing detection using Alternative B (see 33.2.4) determines that the impedance at the PI is greater than Ropen as defined in Table 33–12, it may optionally consider the link to be open circuit and omit the tdbo_timer interval.” The state diagrams require that all PSE types skip the BACKOFF state when the signature is open_circuit while the text makes this behavior optional.

SuggestedRemedy

State diagrams overrides text. Change the text to match the state diagram behavior by replacing the called-out text with, “When a PSE that is performing detection using Alternative B (see 33.2.4) determines that the impedance at the PI is greater than Ropen as defined in Table 33–12, it is recommend that Type 1 or Type 2 PSEs omitted the the tdbo_timer interval, while Type 3 and Type 4 PSEs shall omit the tdbo_timer interval.”

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.7** *P* **73** *L* **14** # 113

Schindler, Fred Seen Simply, Cisco, T

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

The symbols [ ] have no meaning in state diagrams and should be replaced by ( ).

SuggestedRemedy

Use ( ) in the state diagram.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.11** *P* **75** *L* **11** # 54

Darshan, Yair Microsemi

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

The pd_autoclass term is never ready by the state diagram.
(See comment #503 in D2.0)

SuggestedRemedy

If not resolved yet for D2.1, add it to the TDL for the next draft.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.9** *P* **76** *L* **54** # 177

Yseboodt, Lennart Philips

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

New state diagram, variable error_condition, refers to wrong Figures:
"These error conditions are different from those monitored by the state diagrams in Figure 33-26."

SuggestedRemedy

Change to:
"These error conditions are different from those monitored by the state diagrams in Figure 33-21, Figure 33-22, and Figure 33-23."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.9** *P* **77** *L* **17** # 169

Stover, David Linear Technology

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

Definition and usage of iclass_lim_det and _det_pri/_det_sec is inconsistent.

SuggestedRemedy

Add "or this function is not active" to the end of the FALSE value for iclass_lim_det.
Remove the assignment "iclass_lim_det <= FALSE" from global IDLE state.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.9** *P* **82** *L* **25** # 161

Stover, David Linear Technology

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

Typo in Table 33-7. Type 3 PSEs obviously cannot set class_num_events_pri/_sec to "4"

SuggestedRemedy

Change intersection of "Type 3" and "class_num_events_pri…" from "1, 2, 4" to "1, 2"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.9** *P* **82** *L* **30** # 178

Yseboodt, Lennart Philips

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

The changes adopted last cycle that introduced Table 33-8 have issues.
For instance, according to Table 33-7 and 33-8, a Type 4 PSE cannot deliver anything but Class 7 or 8.

SuggestedRemedy

The proposed remedy is to simplify the classification state diagram, to only use pse_avail_power and no longer use class_num_events.
Adopt yseboodt_01_1116_simpleclass.pdf

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.9** *P* **82** *L* **46** # 17

Beia, Christian STMicroelectronics

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

These normative sentences are misplaced, since they have more general scope than just Type3 and Type4 Variables definition

SuggestedRemedy

move the following sentences to 33.2.7 as sixth paragraph (D2.1 page 106 line 18):

Type 1 and Type 2 PSEs shall issue no more class events than the Class they are capable of supporting.
Type 3 and Type 4 PSEs shall issue no more class events than the Class they are capable of supporting between the most recent time VPSE was at VReset for at least TReset and a transition to any of the power up states.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **89** *L* **1** # 165

Stover, David Linear Technology

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

Some optional behaviors described in text are missing from PSE SD.

SuggestedRemedy

See stover_01_1116.pdf

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **89** *L* **1** # 82

Darshan, Yair — Microsemi

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

Typo in "33.2.5.12 Type 3 an Type 4 state diagrams".
Should be "and"

SuggestedRemedy

Change to:
Typo in "33.2.5.12 Type 3 and Type 4 state diagrams".

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **89** *L* **1** # 163

Stover, David — Linear Technology

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

"Type 3 an Type 4 state diagrams" Heading name has a typo.

SuggestedRemedy

Change "an" to "and"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **89** *L* **3** # 18

Beia, Christian — STMicroelectronics

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

Figure 33-15
Entry point for IDLE state is A and not IDLE

SuggestedRemedy

Replace IDLE with A as the label of the entry point of state IDLE

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **89** *L* **4** # 109

Picard, Jean — Texas Instruments

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

The "A" input condition to Idle block has disappeared.

SuggestedRemedy

Put back the "A" entry point to Idle block.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **89** *L* **6** # 179

Yseboodt, Lennart — Philips

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

Linewidth of IDLE line too thick

SuggestedRemedy

Make line thickness the same as the other arrows

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **89** *L* **39** # 180

Yseboodt, Lennart — Philips

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

Figure 33-15, state IDLE to START_CXN_CHK_DETECT:

(CC_DET_SEQ = 2) * (pse_alternative = both)
* pse_ready * !(pwr_app_pri + pwr_app_sec) *
(pse_enable = enable)

Convention is to have */+ at end of line when splitting over multiple lines.

SuggestedRemedy

move * to end of first sentence
(CC_DET_SEQ = 2) * (pse_alternative = both) *
pse_ready * !(pwr_app_pri + pwr_app_sec) *
(pse_enable = enable)

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **89** *L* **44** # 181
Yseboodt, Lennart Philips

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

From START_CXN_CHK_DETECT to IDLE branch missing.

SuggestedRemedy

Add exit branch "tdet_timer_done" to IDLE

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **89** *L* **49** # 110
Picard, Jean Texas Instruments

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

tdet_timer_done exit path is missing.

SuggestedRemedy

Put back the tdet_timer_done path from START_CXN_CHK_DETECT to IDLE block.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **89** *L* **51** # 166
Stover, David Linear Technology

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

"sig_type = open_circ", enumeration "open_circ" no longer exists.

SuggestedRemedy

Replace "open_circ" with "invalid" in 3 locations: IDLE state, transition out of CXN_CHK_EVAL, and transition out of CXN_CHK_DETECT_EVAL.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **90** *L* **28** # 19
Beia, Christian STMicroelectronics

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

Figure 33-15
Exit point for this page's state diagram state is A and not IDLE

SuggestedRemedy

Replace IDLE with A as the label of the exit point of figure 33-15 on page 91

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **91** *L* **35** # 182
Yseboodt, Lennart Philips

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

In exit branch DETECT_EVAL to IDLE the brackets around CC_DET_SEQ 0 or 3 are missing.

(pse_alternative = both) *
((det_temp = only_one) * (sig_pri != valid) +
(det_temp = both_neither) * (sig_sec != valid) +
((CC_DET_SEQ = 0) + (CC_DET_SEQ = 3) *
(det_temp = only_one) * tdet2det_timer_done)) +
(pse_alternative != both) * (sig_pri != valid)

SuggestedRemedy

Add brackets around CC_DET_SEQ 0 or 3

(pse_alternative = both) *
((det_temp = only_one) * (sig_pri != valid) +
(det_temp = both_neither) * (sig_sec != valid) +
(((CC_DET_SEQ = 0) + (CC_DET_SEQ = 3)) *
(det_temp = only_one) * tdet2det_timer_done)) +
(pse_alternative != both) * (sig_pri != valid)

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **91** *L* **40** # 183
Yseboodt, Lennart Philips

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

In new frame statediagram Figure 33-15 label IDLE is used and not A anymore.

SuggestedRemedy

Change label A to IDLE

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **91** *L* **40** # 167

Stover, David — Linear Technology

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

Some arcs point to "A", which used to be entry to global IDLE. Pointer has been changed to "IDLE" (is there an accepted comment associated with this change?)

SuggestedRemedy

Replace pointers to "A" with pointers to "IDLE" (4 locations).

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **92** *L* **36** # 184

Yseboodt, Lennart — Philips

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

In new frame statediagram Figure 33-15 label IDLE is used and not A anymore.

SuggestedRemedy

Change label A to IDLE (twice)

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **93** *L* **6** # 20

Beia, Christian — STMicroelectronics

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

Figure 33-16
The arc between ENTRY_PRI and IDLE_PRI states wasn't there in the original Visio file.

SuggestedRemedy

Remove the arc between ENTRY_PRI and IDLE_PRI states.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **93** *L* **10** # 64

Darshan, Yair — Microsemi

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

Figure 33-16: The exit from IDLE_PRI to START_DETECT_PRI.
We should be able to get to START_DETECT_PRI regardless if pwr_app_sec is TRUE or FALSE.

SuggestedRemedy

Delete "pwr_app_sec" from the condition "!pwr_app_pri * pwr_app_sec"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **93** *L* **10** # 168

Stover, David — Linear Technology

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

If iclass_lim_det_pri and _sec return "false" when do_classification_pri and _sec are "not active", then setting these variables to "false" in ENTRY_PRI and ENTRY_SEC is unnecessary.

SuggestedRemedy

Remove assignment of "false" to iclass_lim_det_pri and _sec in ENTRY_PRI and ENTRY_SEC

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **95** *L* **9** # 65

Darshan, Yair — Microsemi

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

Figure 33-17: The exit from IDLE_SEC to START_DETECT_SEC.
We should be able to get to START_DETECT_SEC regardless if pwr_app_pri is TRUE or FALSE.

SuggestedRemedy

Delete "pwr_app_pri" from the condition "!pwr_app_sec * pwr_app_pri"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **96** *L* **5** # 66

Darshan, Yair Microsemi

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

Figure 33-17. Error in CLASS_EVAL_SEC state. Missing paranthesis in:
"IF (pd_cls_4PID_sec * (sig_sec = valid) * (sig_pri = valid) + pwr_app_pri) THEN"

(This error corrected for figure 33-16 for the primary side but not corrected in figure 33-17 in the secondary side)

SuggestedRemedy

Change from:
IF (pd_cls_4PID_sec * (sig_sec = valid) * (sig_pri = valid) + pwr_app_pri) THEN
To
IF (pd_cls_4PID_sec * (sig_sec = valid) * ((sig_pri = valid) + pwr_app_pri))THEN:

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **96** *L* **5** # 185

Yseboodt, Lennart Philips

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

The IF statement in CLASS_EVAL_SEC does not match with CLASS_EVAL_PRI.
Comment #212 against D2.0, made changes in _PRI, but not in _SEC. I assume this was forgotten ?

EVAL_PRI: "IF (pd_cls_4PID_pri * (sig_pri = valid) * ((sig_sec = valid) + pwr_app_sec)) THEN"
EVAL_SEC: "IF (pd_cls_4PID_sec * (sig_sec = valid) * (sig_pri = valid) + pwr_app_pri) THEN"

SuggestedRemedy

Change the IF statement in CLASS_EVAL_SEC to read:
"IF (pd_cls_4PID_sec * (sig_sec = valid) * ((sig_pri = valid) + pwr_app_pri)) THEN"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **97** *L* **22** # 55

Darshan, Yair Microsemi

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

(TDL for comment #254 , D2.0)
The PSE state machine part for single signature (Figure 33-18) when it needs to know class code by issuing 3 finger and then doing class reset due to lake of sufficient power in which it need to generate only one finger etc. is missing.
This is covered by the text but not in the state machine.

SuggestedRemedy

Add to figure 33-18 the missing state machine part in darshan_08_1116.pdf if available for this meeting.
If not available, keep this in the TDL.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **97** *L* **52** # 186

Yseboodt, Lennart Philips

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

In new frame statediagram Figure 33-18 label IDLE is used and not A anymore.

SuggestedRemedy

Change label A to IDLE

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **98** *L* **39** # 45

Darshan, Yair Microsemi

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

The exit from CLASS_RESET_PRI, tclass_rst_timer_pri_done.
tclass_rst_timer_pri is not exists.
1. It should be tclass_reset_timer_pri
2. tclass_reset_timer_pri doesnt exists in the timers list.

SuggestedRemedy

1. replace tclass_rst_timer_pri_done with tclass_reset_timer_pri_done in the exit from CLASS_RESET_PRI.
2. Add tclass_reset_timer_pri to the timer list in 33.2.5.10.
"tclass_reset_timer_pri
A timer used to limit the classification reset time on the Primary Alternative; See Table 33–17."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **99** *L* **21** # 111

Picard, Jean — Texas Instruments

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

The exit condition from CLASS_EV3_SEC to K is not edited correctly and is unreadable

SuggestedRemedy

Correct the editing to avoid the text overlapping over the CLASS_EV3_SEC block.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.5.12** *P* **99** *L* **38** # 50

Darshan, Yair — Microsemi

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

The exit from CLASS_RESET_SEC, tclass_rst_timer_sec_done.
tclass_rst_timer_sec is not exists.
1. It should be tclass_reset_timer_sec
2. tclass_reset_timer_sec doesnt exists in the timers list.

SuggestedRemedy

1. replace tclass_rst_timer_sec_done with tclass_reset_timer_sec_done in the exit from CLASS_RESET_SEC.
2. Add tclass_reset_timer_sec to the timer list in 33.2.5.10.
"tclass_reset_timer_sec
A timer used to limit the classification reset time on the Secondary
Alternative; See Table 33–17."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.5.12** *P* **101** *L* **8** # 188

Yseboodt, Lennart — Philips

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

"alt_pwrd_sec * !pwr_app_sec" in exit branch IDLE_INRUSH_SEC is not correct.

The inrush SD is stuck in IDLE_INRUSH this way.

SuggestedRemedy

Change to "alt_pwrd_sec".

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.5.12** *P* **101** *L* **8** # 187

Yseboodt, Lennart — Philips

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

"alt_pwrd_pri * !pwr_app_pri" in exit branch IDLE_INRUSH_PRI is not correct.

The inrush SD is stuck in IDLE_INRUSH this way.

SuggestedRemedy

Change to "alt_pwrd_pri".

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6** *P* **101** *L* **22** # 21

Beia, Christian — STMicroelectronics

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

the transition between 2-pair and 4-pair power is possible only if the conditions defined in 33.2.8.1 are met

SuggestedRemedy

replace:
When a PSE is already in POWER_ON, it is allowed to transition between 2-pair and 4-pair power without redoing detection as described in 33.2.8.1.

with:
When a PSE is already in POWER_ON, it may be allowed to transition between 2-pair and 4-pair power without redoing detection if the conditions described in 33.2.8.1 are met.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.2** *P* **103** *L* **21** # 189

Yseboodt, Lennart — Philips

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

"The PSE shall not be damaged by up to 5 mA backdriven current over the range of V oc as specified in Table 33-10."

Voc is not a range, it is a maximum.

SuggestedRemedy

"The PSE shall not be damaged by up to 5 mA backdriven current up until a voltage of V oc as specified in Table 33-10."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8** *P* **104** *L* **49** # 51

Darshan, Yair Microsemi

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

TDL #510 D2.0.
See darshan_01_1116.pdf for a proposal to address TDL list regarding Iunb=3%*(Ipeak or Icable or Ipeak-2P) from comment #510 D2.0.

SuggestedRemedy

Adopt darshan_01_1116.pdf

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8.1** *P* **105** *L* **32** # 56

Darshan, Yair Microsemi

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

Switching between 2-pairs and 4-pairs is not covered in the state machine.
This comment was include in the TDL for comment #293 D2.0.

SuggestedRemedy

If not resolved yet for D2.1, add it to the TDL for the next draft.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.7** *P* **105** *L* **37** # 190

Yseboodt, Lennart Philips

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

"The PSE detects a valid detection signature on the unpowered pairset when power has been applied to a pairset"

Rather inelegant wording.

SuggestedRemedy

"The PSE detects a valid detection signature on the unpowered pairset when power is provided over 2-pair"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **105** *L* **49** # 191

Yseboodt, Lennart Philips

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

"... mutual identification allows Type 2, Type 3 or Type 4 PSEs to differentiate ..."

Serial comma.

SuggestedRemedy

"... mutual identification allows Type 2, Type 3, or Type 4 PSEs to differentiate ..."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **106** *L* **7** # 192

Yseboodt, Lennart Philips

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

The text flow of 33.2.7 isn't entirely logical.

SuggestedRemedy

Do the following:
- Split the paragraph that starts on page 106,l 5 at line 7
  (@ 'The assigned Class is ...')
- Move the paragraphs at line 20 ("The PSE shall provide VClass") to line 7

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **106** *L* **9** # 114

Schindler, Fred Seen Simply, Cisco, T

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

The explanation, “The assigned Class is the result of the PD’s requested Class and the number of class events produced by the PSE as shown in Table 33–13 and Table 33–14.” is incomplete. DLL operations may alter the assigned class, see Table Table 33-25.

SuggestedRemedy

Replace the referenced sentence with, “The assigned Class is the result of the PD’s requested Class and the number of class events produced by the PSE as shown in Table 33–13 and Table 33–14 or operations performed using DLL see Table 33-25.”

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **106** *L* **15** # 193

Yseboodt, Lennart Philips

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

"Based on the assigned Class to a single-signature PD, the minimum power level at the output of the PSE is P Class as shown in Equation (33-2). P Class is the power the PSE supports at the PI. Based on the assigned Class to a dual-signature PD, the minimum power level supported for a pairset at the output of the PSE is P Class-2P as shown in Equation (33-3)."

This information is repeated 2 paragraphs later, in the text that goes with Equation 33-2 and 33-3.

SuggestedRemedy

Replace paragraph by this:
"The assigned Class to a single-signature PD determines PClass, the minimum power level the PSE supports at the PI, as defined in Equation (33-2). For a dual-signature, this minimum power level is PClass-2P, defined per pairset in Equation (33-3)."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **106** *L* **37** # 195

Yseboodt, Lennart Philips

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

In equation 33-2, the description of PClass_PD is:
"is the PD's power classification (see Table 33-27)"

SuggestedRemedy

Would be better stated as:
"is the maximum power at the PD PI per the PDs assigned Class, as defined in Table 33-27"

Also use this description for
- Eq 33-27, page 159
- Eq 33-29, page 161

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **106** *L* **37** # 194

Yseboodt, Lennart Philips

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

"PClass_PD is the PDs power classification (see Table 33-27)"

Non-preferred way to link to a Table and inconsistent with Equation 33-3

SuggestedRemedy

"PClass_PD is the PDs power classification as defined in Table 33-27"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **106** *L* **52** # 196

Yseboodt, Lennart Philips

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

In equation 33-3, the description of PClass_PD-2P is:
"is the PD's power classification as defined Table 33-28"

SuggestedRemedy

Would be better stated as:
"is the maximum power at the PD PI for a pairset per the PDs assigned Class as defined in Table 33-28"

Also use this description for
- Eq 33-30, page 161

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **107** *L* **1** # 115

Schindler, Fred — Seen Simply, Cisco, T

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

Existing text, “If the PD connected to the PSE performs Autoclass (see 33.2.7.3 and 33.3.6.3), the PSE may set its minimum supported output power based on PAutoclass, …” and the Type 3 and 4 PSE state diagram do not provide the behavior that determines pse_available_pwr, which is used to determine the power provided to the PD. Similarly I do not see where autoclassification takes place and how the system adjusts the PSEAllocatedPowerValue.

SuggestedRemedy

The subject matter expert (Lennart) tackling D2.0 comments 232, and 476, could solve determining pse_available_pwr, by modifying function do_autoclassification to set this value.” The other missing behavior will likely be completed to close the D2.0 TDL comments. This comment should not be considered satisfied until the deficient behavior is provided.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **107** *L* **10** # 86

Jones, Chad — Cisco

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

Table 33-13. Rows 2 and 5 have the same criteria in the first two columns but different results in the third. This is truly two solutions for the same problem. If you are a class 4, you can look at row 2 or row 5, provide only one class even and then assign class 3 or class 0. I get that this is there for legacy Type 1 devices as they have to be allowed to assign Class 0. It just isn't very clear.

SuggestedRemedy

Step one: move row 2 below row 5.
Step 2: move the superscript 2 in column 4 to column three. This has a problem of making it look like 'zero squared', consider making just this cell say 'Class 0'
Step 3: modify note 2 from "Only applies to Type 1 and Type 2 PSEs." to "Only applies to Type 1 and Type 2 PSEs. Type 3 and Type 4 PSEs that see PD requested class of 4 but stop after one PSE class event are required to assing class 3, whereas Type 1 and Type 2 PSEs assign class 0."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **107** *L* **10** # 197

Yseboodt, Lennart — Philips

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

Table 33-13 is titled "Physical Layer power classifications for single-signature PDs (P Class)"
Table 33-14 is title "Physical Layer power classification for dual-signature PDs (P Class-2P)"

We never say which PSE Type needs to use which Table. Even if we did, it would suggest that Type 1/2 PSEs need
to verify that the PD is single-signature, which they cannot do.

SuggestedRemedy

Proposed is to:
- Make Table 33-13 and 33-14 into Type 3/4 PSE Tables
- Create a new Table in the same style for Type 1/2

This also allows us to clean up some of the oddball cases around Class 0 from Table 33-13.

Adopt yseboodt_03_1116_pclasstable.pdf

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **108** *L* **10** # 87

Jones, Chad — Cisco

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

a sentence was added and broke up the paragraph flow. I want to reorder the sentences. Data Link Layer classification takes precedence over Physical Layer classification. After a successful DLL classification, the assigned Class changes depending on the value of the PSEAllocatedPowerValue variable, as defined in Table 33–15. The Physical Layer classification of the PD is the maximum power that the PD draws across all output voltages and operational modes.

SuggestedRemedy

change to: Data Link Layer classification takes precedence over Physical Layer classification. The Physical Layer classification of the PD is the maximum power that the PD draws across all output voltages and operational modes. After a successful DLL classification, the assigned Class changes depending on the value of the PSEAllocatedPowerValue variable, as defined in Table 33–15.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **108** *L* **10** # 88

Jones, Chad Cisco

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

I want it to be perfectly clear that the PD is required to advertise it's maximum class and cannot request more power via LLDP than was requested via Layer 1.

SuggestedRemedy

change: "Data Link Layer classification takes precedence over Physical Layer classification."
to: "Data Link Layer classification takes precedence over Physical Layer classification but can never be more than requested over Physical Layer classification."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **108** *L* **11** # 116

Schindler, Fred Seen Simply, Cisco, T

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

The existing text, “The Physical Layer classification of the PD is the maximum power that the PD draws across all output voltages and operational modes.” Should be clarified to allow, already agreed upon operational states where a power limited PSE stops its physical layer classification at a point within its budget (page 106, line 11). After this point, the PSE may have its budget increase, due to a system power budget change, and use DLL to move the previously power constrained PSE port to a higher power level. The upper power level is limited by what the PD will request using physical layer classification if the PSE uses all classification events allowed.

The requested Class of a PD is not measurable (page 149, Line 30), was not used in the following solution because the requested Class of a PD may not result in the desired class value, see a related comment marked COMMENT-1.

SuggestedRemedy

Replace the called out sentence with,
“The Physical Layer classification value of the PD is the maximum power that the PD draws across all output voltages and operational modes before DLL is utilized. The Physical Layer classification value of the PD by a PSE with no budget power budget limitation is the maximum power that the PD draws across all output voltages and operational modes.”

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **108** *L* **12** # 198

Yseboodt, Lennart Philips

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

Table 33-15 introduces the mapping between PSEAllocatedPowerValue and the Assigned Class.

Neither the PD power numbers, nor anything about DLL has been introduced at this point in the text.

SuggestedRemedy

Insert the following sentence at page 108, line 11, before "The Physical Layer classification of the PD is...":

"The PSEAllocatedPowerValue values correspond with the maximum power a PD may draw, PClass_PD; see Table 33-27 and 33.5.3.3"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **108** *L* **20** # 11

Anslow, Pete Ciena

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

The IEEE style manual includes:
"Ranges should repeat the unit (e.g., 115 V to 125 V). Dashes should never be used because they can be misconstrued as subtraction signs."

SuggestedRemedy

In Table 33-15, change "1 – 39" to "1 to 39" and so on.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7** *P* **108** *L* **50** # 199

Yseboodt, Lennart Philips

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

The TF agreed to make Physical Layer classification mandatory for Type 3/4 PSEs.
See motion 6: http://www.ieee802.org/3/bt/public/jan15/motions_and_straw_polls_0115.pdf

So far we have not encoded this in a text requirement.
Any such requirement needs to take into account that:
- A PSE may be configured to limit the Class or number of class events it is willing to provide
- A PSE may have a power budget limit
- PSEs may grant higher power than the assigned Class through DLL

SuggestedRemedy

Insert the following as new paragraph in 33.2.7, on page 108, line 50.

"A Type 3 or Type 4 PSE shall be capable of assigning the highest Class it can support by means of Physical Layer Classification."

Add to PICS.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8.4.1** *P* **108** *L* **513** # 58

Darshan, Yair Microsemi

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

Adding design flexibility to PSE when Equation 33-15 is used at higher than Vpse-2P_min voltage.
This comment addresses stover_01_0916.pdf from comment #513 D2.0.
See darshan_02_1116.pdf for proposed remedy.

SuggestedRemedy

See darshan_02_1116.pdf for proposed remedy.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.1** *P* **109** *L* **20** # 200

Yseboodt, Lennart Philips

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

"If the result of the class event is Class 4, a Type 1 PSE shall assign the PD to Class 0;"

The result of a class event is a class signature.

SuggestedRemedy

"If the result of the class event is class signature 4, a Type 1 PSE shall assign the PD to Class 0;"

Update PICS PSE54

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.2** *P* **110** *L* **6** # 201

Yseboodt, Lennart Philips

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

"See Annex 33C for more details and timing diagrams."

SuggestedRemedy

Sits there on a paragraph all of its own.
Belongs with the previous paragraph. Append this to the end of the previous paragraph.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.2** *P* **110** *L* **8** # 202

Yseboodt, Lennart Philips

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

"Type 3 PSEs shall provide a maximum of four class events and four mark events for single-signature PDs and a maximum of three class events and three mark events on each pairset for dual-signature PDs unless a class reset event clears the class and mark event counts."

Two issues:
- we also need to support the reset statement for single-signature
- the exception as worded is insufficiently precise

Also here the used of a dashed list will increase readability (with editorial license to decide not to do it if it looks bad).

SuggestedRemedy

"Type 3 PSEs
- shall provide a maximum of four class events and four mark events for single-signature PDs between a class reset and the application of power to the PD.
- shall provide a maximum of three class events and three mark events on each pairset for dual-signature PDs between a class reset and the application of power to that pairset.

Type 4 PSEs
- shall provide a maximum of five class events and five mark events for single-signature PDs between a class reset and the application of power to the PD.
- shall provide a maximum of four class events and four mark events on each pairset for dual-signature PDs between a class reset and the application of power to that pairset."

Update PICS accordingly.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.2** *P* **110** *L* **13** # 89

Jones, Chad Cisco

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

the sentence: "Type 3 and Type 4 PSEs may issue a class reset event to perform mutual identification." leaves out the reason why one might do this.

SuggestedRemedy

add this sentence at the end of the paragraph (line 14): "This behavior is allowed because it takes three class events to discover a DS PD. The PSE may have progressed to this point only having Type 1 power available and will need to reset and start classification over with the knowledge that they are probing a DS PD."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.2** *P* **110** *L* **13** # 117

Schindler, Fred Seen Simply, Cisco, T

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

Existing text, “Type 3 and Type 4 PSEs may issue a class reset event to perform mutual identification.” does not provide details on what a class reset is or does. The Type 3 and 4 PSE state diagram does not provide this behavior. Timing details related to Tpon may be missing

SuggestedRemedy

This solution assumes PSE classification of a single signature PD.

Modify the reference by appending, the sentence, “A class reset event causes classification to enter CLASS_EV1_LCE.” Add an entry into CLASS_EV1_LCE with the condition “pse_class_reset”. On page 81 add the new definition,
“pse_class_reset
An implementation-specific means of repeating classification, see 33.3.7.2.

FALSE: Do not permit entry into PD classification (default).
TRUE: Permit entry into PD classification.”

Add operation “pse_class_reset <= FALSE” within state CLASS_EV1_LCE.

Participants that need this ability should discuss the need to amend text related to meeting Tpon requirements if the existing timing cannot be met (i.e. class done twice and power needs to be on within Tpon).

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.2** *P* **110** *L* **49** # 203

Yseboodt, Lennart Philips

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

"All the mark event states (MARK_EV_) commence when the PI or pairset voltage falls below V Class min and end when the PI voltage exceeds V Class min or falls below V Reset."

The description is wrong. Mark states end when the tme1 or tme2 timers are done.

They are entered when the relevant class timer is done.

The text makes it seem as if the voltage on the PI is the cause of entering/leaving the state, when the state diagram clearly says timing is leading and voltage is a consequence of being in a particular state.

SuggestedRemedy

This text is wrong, and all relevant information about what to do during a MARK state is provided elsewhere in the section.

Remove the quoted sentence.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.2** *P* **111** *L* **15** # 204

Yseboodt, Lennart Philips

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

"If the result of the first class event is Class 4, a Type 2 PSE may... "

That should be class signature.

SuggestedRemedy

"If the result of the first class event is class signature 4, a Type 2 PSE may... "

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.2** *P* **111** *L* **26** # 205

Yseboodt, Lennart Philips

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

Table 33-17, additional information now (see comment marked YSEBOODT1) only contains references to the section the table is in, with the exception of one reference to the Autoclass section, which immediately follows the table.

SuggestedRemedy

Remove the additional information column.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.2** *P* **111** *L* **27** # 206

Yseboodt, Lennart Philips

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

Table 33-17 has become extremely cramped and violates the page's margins.

This is due to addition of the PSE Type column.

The PSE Type column is acutally more descriptive than the "Single/Multiple event" column.

SuggestedRemedy

- Remove the 'Single- or Multiple Event' column from Table 33-17

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.2** *P* **111** *L* **33** # 207

Yseboodt, Lennart Philips

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

Table 33-17, item 1, Vclass.

SuggestedRemedy

Add a footnote to parameter name "VClass" which states:

"It is recommended to use a higher Vclass for the third class event. This will facilitate debugging using a scope."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.2** *P* **112** *L* **1** # 12

Anslow, Pete Ciena

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

The heading for Table 33-17 is missing "continued" on the second part.

SuggestedRemedy

Place the cursor at the end of table title on first page. Then click on the Variables Tab and insert "Table Continuation" variable.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.2** *P* **112** *L* **7** # 208

Yseboodt, Lennart Philips

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

Table 33-17, item 10, on T_pdc is listed only for Type 1.
Single-event classification also exists for Type 2 PSEs.

SuggestedRemedy

Change Table 33-17, item 10, "PSE Type" from "1" to "1, 2"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.2** *P* **112** *L* **8** # 22

Beia, Christian STMicroelectronics

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

Table 33-17
Single-Event Physical Layer classification timing specification also applies to Type2 PSEs

SuggestedRemedy

Table 33-17 Item 10 Single-Event Physical Layer classification timing:
Add "2" to column PSE Type

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.2** *P* **112** *L* **13** # 23

Beia, Christian STMicroelectronics

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

Table 33-17
Tcle1 spec only applies to Type2 PSEs

SuggestedRemedy

Table 33-17 Item 12 Tcle1:
Remove "3,4" from column PSE Type

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.2** *P* **112** *L* **22** # 209

Yseboodt, Lennart Philips

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

COMMENTID YSEBOODT1
Table 33-17. Due to the addittion of a Type column, the text in the Additional information field no longer fits for item 16.
"The maximum value of T ME2 is limited by T pon , as defined in 33.2.8.13."

SuggestedRemedy

Since this is relevant information, that belongs in the classification section, we should not move it all the way to 33.2.8.13.
Do:
- Convert this text into a footnote to the table.
- Empty the Additional information field for item 16

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.3** *P* **112** *L* **36** # 90

Jones, Chad Cisco

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

the sentence: "If the PSE implements Autoclass and the connected PD requests Autoclass during classification," is missing pointers to help the reader understand what we are saying.

SuggestedRemedy

change to: "If the PSE implements Autoclass and the connected PD requests Autoclass during classification (see 33.3.6.3 and CLASS_EV1_AUTO in 33.2.7.2),"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.3** *P* **112** *L* **36** # 210

Yseboodt, Lennart Philips

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

"If the PSE implements Autoclass and the connected PD requests Autoclass during classification, the PSE shall measure P Autoclass ."

The do_autoclassification function returns variable pd_autoclass that describes the above case.
I have a TDL attached to my name that says we need to use this variable somewhere.

D2.0 TDL #388

SuggestedRemedy

Replace quoted text by:
"If the variable pd_autoclass has the value 'True', this indicates that the PSE supports Autoclass, and the PD has requested Autoclass during Physical Layer classification. A PSE shall measure P_Autoclass when it reaches the POWER_ON state and pd_autoclass is 'True'.

Update PICS PSE80

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.3** *P* **112** *L* **40** # 211

Yseboodt, Lennart Philips

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

"in order to allocate enough power to cope with increases in channel resistance due to heating."

SuggestedRemedy

"in order to allocate enough power to cope with increases in channel resistance due to temperature increase."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8** *P* **113** *L* **38** # 212

Yseboodt, Lennart Philips

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

Table 33-19, item 2, parameter V_Port_PSE_diff is described as:
"Output voltage pair-to-pair difference of pairs with the same polarity in the POWER_ON state".
Has value 10mV.

According to that description, the PSE can have 10mV of difference between the positive pairs, and another 10mV in the negative, resulting in a total V_PSE to V_PSE voltage diff of 20mV.
I checked with Yair and this is technically correct, we don't need to change the definition or the the number.

However - too much information is presented in the Table 33-19, spread over a parameter name and additional information.

SuggestedRemedy

Do the following:
- Change the parameter name of item 2 to "Output voltage pair-to-pair difference"
- Change Additional information to "See 33.2.8.1a"
- Create a new subsection after 33.2.8.1 titled "Output voltage pair-to-pair difference"
- With content:
"VPort_PSE_diff is the maximum voltage difference between the pairs with the same polarity, at no load condition, when operating over 4-pair, in the POWER_ON state."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8** *P* **113** *L* **40** # 46

Darshan, Yair Microsemi

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

Table 33-19 item 2, VPort_PSE_diff.
1. It is not clear if it is total 10mV or +/-10mV which is 20mV. (It is total 10mV regardless of the direction).
2. It will be helpful to show where it is measured and its location.

SuggestedRemedy

1. In the additional information column for VPort_PSE_diff change the text to:
"Open load voltage, when operating over 4-pair. See Figure 33B-2.
2. In the parameter name, modify the text to be:
"Output voltage pair-to-pair **total voltage** difference of pairs with the same polarity in the POWER_ON state"
3. In Figure 33B-2, add VPort_PSE_diff label and arrow between the labels of the lines with "i1" and "i2". See darshan_07_1116.pdf Figure 33B-2 for reference.
4. In Figure 33B-2, add VPort_PSE_diff label and arrow between the labels of the lines with "i3" and "i4". See darshan_07_1116.pdf Figure 33B-2 for reference.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8** *P* **114** *L* **1** # 213

Yseboodt, Lennart Philips

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

Table 33-19 has several parameter that depend on Class.
We use inconsistent wording in the description to point this out.

SuggestedRemedy

Use the construction "... per the assigned Class" for item 5, 6, 7, 11, 12, 18, and 19.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8** *P* **114** *L* **16** # 80

Darshan, Yair Microsemi

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

Table 33-19, item 6, "Total output current of both pairsets of the same polarity in the POWER_UP state as function of assigned Class".

The "assigned class" is irrelevant here due to the fact that the PD advertised class contain the information of the PD capability to consume Iinrush and not the assigned class.
Example 1:
PSE Type 4 that detect single-signature class 8 need to supply the Inrush current that suitable to class 8 due to the fact that if the assigned class in this case will be e.g. 6, it doesn't change the PD inrush circuitry (including its capacitance)and it remains class 8 for Inrush matters.
Example 2:
A Type 4 SS PD connected to Type 2 PSE.
In this case regardless of the PD inrush needs, The PSE can supply only 0.4A to 0.45A.
So the PD may or may not work due to Iinrush and also due to not sufficient power so it is not important if it is the assigned class or the advertised class.

SuggestedRemedy

1. Change to:
"Total output current of both pairsets of the same polarity in the POWER_UP state".
OR
2. Group to find good technical arguments why to keep it as it is and review case by case i.e. for each PSE class and Type.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8** *P* **114** *L* **28** # 214

Yseboodt, Lennart — Philips

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

Table 33-19, Item 6, Iinrush.

This is the specification for TOTAL 4-pair inrush current.
For dual-sig Class 1-4 it is 500mA.
For dual-sig Class 5 it is 650mA.

What is the correct Iinrush value for a DS PD that gets assigned Class 4 on Alt A, and Class 5 on Alt B ?
This table doesn't say that.

SuggestedRemedy

The simplest solution is to specify that if at least one pairset gets assigned to Class 5, Iinrush = 650mA.

- Replace "Dual-signature PD, Class 1 to 4" by "Type 3 dual-signature PD"
- Replace "Dual-signature PD, Class 5" by "Type 4 dual-signature PD"

Per the definition of Type 4 for dual-signature, this results in the desired behaviour.

The alternate solution, is to remove the Iinrush minimum values for dual-signature PDs. They follow from the per pairset Iinrush-2P values anyway. In case of a split dual sig (Class 4 + 5), it would result in a slightly lower total minium Iinrush requirement.

- Remove Min values for Item 6 Iinrush, for dual-signature
- Replace "Dual-signature PD, Class 1 to 4" by "Type 3 dual-signature PD"
- Replace "Dual-signature PD, Class 5" by "Type 4 dual-signature PD"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8** *P* **114** *L* **30** # 81

Darshan, Yair — Microsemi

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

Table 33-19, item 7, "Output current per pairset in the POWER_UP state as function of the assigned Class".
The "assigned class" is irrelevant here due to the fact that the PD advertised class contain the information of the PD capability to consume Iinrush-2P and not the assigned class.
Example 1:
PSE Type 4 that detect single-signature class 8 need to supply the Inrush current that suitable to class 8 due to the fact that if the assigned class in this case will be e.g. 6, it doesn't change the PD inrush circuitry (including its capacitance)and it remains class 8 for Inrush matters.
Example 2:
A Type 4 SS PD connected to Type 2 PSE.
In this case regardless of the PD inrush needs, The PSE can supply only 0.4A to 0.45A.
So the PD may or may not work due to Iinrush and also due to not sufficient power so it is not important if it is the assigned class or the advertised class.

SuggestedRemedy

1. Change to:
"Output current per pairset in the POWER_UP state."
OR
2. Group to find good technical arguments why to keep it as it is and review case by case i.e. for each PSE class and Type.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8** *P* **114** *L* **44** # 215

Yseboodt, Lennart Philips

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

Table 33-19, Item 9, I_Cut-2P.

ICut-2P is the range in which the PSE MAY turn off due to overload.
How is it specified right now ?
ICut-2P min is Icon-2P => this makes perfect sense.
ICut-2P max is ILIM-2P for Type 1/2 PSEs and not specified for Type 3/4 PSEs.
ILIM-2P in itself is a range, with Class dependent numbers for the minimum, and the PSE upperbound template for the maximum.
Also, ICut-2P is "optional" but is in a normative Table with associated shall.

Verdict: convoluted, incomprehensible specification for a simple concept.
How often is Icut-2P used in the draft ? Precisely TWICE. Once in the Table where it is defined, once more in 33.2.8.6.

SuggestedRemedy

- Remove Item 9 from Table 33-19 (ICut-2P)
- Replace in 33.2.8.6:
"If I Port-2P , the current supplied on a pairset by the PSE to the PI, exceeds I CUT-2P for longer than T CUT-2P , the PSE may remove power from that pairset."
By:
"If I Port-2P , the current supplied on a pairset by the PSE to the PI, exceeds I Con-2P for longer than T CUT-2P , the PSE may remove power from that pairset."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8** *P* **116** *L* **8** # 216

Yseboodt, Lennart Philips

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

No parameter description for PSE 1,2 in item 18 Ihold-2P for PSE Type 1 and 2.

SuggestedRemedy

add: "Class 0 to 4"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8** *P* **116** *L* **37** # 164

Stover, David Linear Technology

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

TDL D2.0 #510 - Intra-pair Current Unbalance

SuggestedRemedy

Change Iunb,max from "3% * I_Peak" to "3% * I_Peak-2P_unb"; reference 33.2.8.4 in comments.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8.2** *P* **117** *L* **30** # 92

Jones, Chad Cisco

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

the note need punctiation to make it easier to read: "NOTE—The occurrence of voltage transients lasting more than 250 µs or voltage steps of significant amplitude (within the VPort_PSE-2P specification) should be limited to rare circumstances such as those involving switchover of backup power supplies to ensure system robustness or those involving significant change in current demand on the PSE power supply due to a large load step spread over multiple powered ports."

SuggestedRemedy

change to: "NOTE—The occurrence of voltage transients lasting more than 250 µs or voltage steps of significant amplitude (within the VPort_PSE-2P specification) should be limited to rare circumstances such as: those involving switchover of backup power supplies to ensure system robustness or, those involving significant change in current demand on the PSE power supply due to a large load step spread over multiple powered ports."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8.4** *P* **118** *L* **43** # 217

Wendt, Matthias Philips

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

"I Peak-2P-unb is the minimum current due to unbalance effects that a PSE must support on a pairset as defined by Equation (33-11)."

Only applies when 4-pair powering a single-signature PD.
Also 'must support' is not appropriate.

SuggestedRemedy

"I Peak-2P-unb is the minimum current due to unbalance effects that a PSE supports on a pairset, as defined by Equation (33-11), when powering a single-signature PD over 4-pair."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8.4** *P* **118** *L* **43** # 218

Yseboodt, Lennart Philips

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

"I Peak is the total current of both pairs with the same polarity that a PSE supports."

Only applies when 2-pair powering or 4-pair powering a single-signature PD.

SuggestedRemedy

"I Peak is the total current of both pairs with the same polarity that a PSE supports, as defined in Equation 33-10, when powering either in 2-pair, or 4-pair powering a single-signature PD."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8.4** *P* **119** *L* **50** # 75

Darshan, Yair Microsemi

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

Comment #512 D2.0 suggested remedy (done together with David Stover) per darshan_16_0916Rev003.pdf was not implemented as presented, discussed and approved in September 2016 meeting.
(See http://www.ieee802.org/3/bt/public/sep16/darshan_16_0916Rev003.pdf)
Please see darshan_14_1116.pdf which is identical to the one that was approved with some editing changes for the Table/Equation/Page/Line/ numbers and content to sync with D2.1.

SuggestedRemedy

1. Implement http://www.ieee802.org/3/bt/public/sep16/darshan_16_0916Rev003.pdf with the necessary editing actions to sync with D2.1 OR
2. Implement darshan_14_1116.pdf which do the editing work (preferred).

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8.4.1** *P* **120** *L* **13** # 71

Darshan, Yair Microsemi

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

Some updates are required for D2.1 to resolve issues raised during the discussions at september 2016.
1. Resolving TDL for comment #78 D2.0 (Yair to align paragraphs above and below Figure 33B-1 to remove repetition. See comment 78 in D2.0)
See updates to PSE-PD unbalance requirements in darshan_07_1116.pdf.
2. Updating 33B.4 to clarify its use.
3. Updating figure 33B-2 for the locatio of VPort_PSE_diff.
4. Other issues.

SuggestedRemedy

Addopt darshan_07_1116.pdf.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8.4.1** *P* **120** *L* **21** # 57

Darshan, Yair Microsemi

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

(TDL #513 from D2.0)
Accuracy of Equation 33-15 at short cable.
This comment addresses stover_01_0916.pdf from comment #513 D2.0 regarding the accuracy of equation 33-15 at short cables.
See darshan_02_1116.pdf for proposed remedy.

SuggestedRemedy

See darshan_02_1116.pdf for proposed remedy.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8.5** *P* **120** *L* **43** # 219

Yseboodt, Lennart Philips

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

"Type 3 and Type 4 PSEs that have assigned Class 5 to 8 to a single-signature PD shall reach the POWER_ON state on both pairsets within Tinrush-2P max,
starting with the first pairset transitioning into the POWER_UP state, and where the second pairset transitions to POWER_UP anytime within this time period."

Spelling mistake in Tinrush-2P max, need capital I.

SuggestedRemedy

Fix.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8.5** *P* **121** *L* **37** # 72

Darshan, Yair Microsemi

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

Typo in "The range to t0 is ..."
It should be "The range for t0 is ..."

SuggestedRemedy

See above.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8.7** *P* **122** *L* **35** # 73

Darshan, Yair Microsemi

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

Missing "PD" in the text:
"The right side vertical axis ....a Type 3 or Type 4 PSE supplies power to a single-signature over 4-pair."

SuggestedRemedy

Change to:
"The right side vertical axis ....a Type 3 or Type 4 PSE supplies power to a single-signature PD over 4-pair."

Proposed Response *Response Status* **O**

Cl **33** *SC* **3.2.8.7** *P* **123** *L* **45** # 76

Darshan, Yair Microsemi

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

"The total current at ILIM-2P min operating point during TLIM-2P min is ILIM_min is defined by Equation (33–17)."
Missing "and".

SuggestedRemedy

Change to:
"The total current at ILIM-2P min operating point during TLIM-2P min is ILIM_min and is defined by Equation (33–17)."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8.7** *P* **123** *L* **45** # 220

Yseboodt, Lennart Philips

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

ILIM_min is defined here in Equation 33-17 as Ipeak_max + 4mA.
Ipeak_max however, does not exist, we only have a reference in the "where" part saying to use the "maximum value of Ipeak from Equation 33-10". It is not obvious what this maximum value really is.

SuggestedRemedy

It will be more clear to calculate ILIM_min and put that in Table 33-19.

- Add a new item to Table 33-19, after item 11 (I_LIM-2P)
Parameter: "Output current - at short circuit condition, when operating in 4-pair mode, when connected to a single-signature PD, as function of the Class assigned to the PD"
Symbol: I_LIM
Unit: A
Min:

	PSE Type:	
Class 0-4	I_LIM-2P	3,4
Class 5	0.958	3,4
Class 6	1.278	3,4
Class 7	1.539	4
Class 8	1.856	4

Max: (empty)
Additional information: See 33.2.8.7
- Remove page 123, lines 45-54

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8.7** *P* **124** *L* **14** # 221

Yseboodt, Lennart Philips

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

Figure 33-29 uses "I_LIM_min" that should be "I_LIM min".

SuggestedRemedy

Fix.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8.11** *P* **126** *L* **30** # 222

Yseboodt, Lennart Philips

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

"NOTE--For practical implementations, it is recommended that Type 1 PSEs support Type 2, 3, 4 I unb requirements."

It is likely that I_unb requirements for Type 3+4 will change during this cycle.
In any case, "Type 2,3,4" is not the way to refer to multiple Types.

SuggestedRemedy

Change to:
"NOTE--For practical implementations, it is recommended that Type 1 PSEs support Type 2 I_unb requirements."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8.11** *P* **126** *L* **30** # 77

Darshan, Yair Microsemi

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

(TDL #510 D2.0)
"NOTE-For practical implementations, it is recommended that Type 1 PSEs support Type 2, 3, 4 Iunb requirements."
This is incorrect.
For practical implementations it is recommended that Type 1 PSEs support Type 2 and not Type 3 and 4 as well.
For Type 3 and 4, Iunb=0.03*Ipeak-2P_unb.
There is no technical reason that Type PSEs magnetics will have to be designed to work with Type 3 and Type 4 Iunb which can be 3 times higher.
Ibias for any class is Ibias=Iunb/2=0.03*Iport/2 when working over 2-pairs.
When working over 4-pairs, Ibias=Iunb/2=Ipeak-2P_unb*0.03/2....and Ipeak-2P_unb for Type 4 is almost 3 times than what is required for Type 1.

SuggestedRemedy

Adopt Darshan_01_1116.pdf

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8.12** *P* **126** *L* **40** # 223

Yseboodt, Lennart Philips

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

"This equates to a maximum I_Port-2P current I_LPS defined in Equation (33-24)."

SuggestedRemedy

Better description:
"I_LPS is defined in Equation 33-24 and is the maximum current per pairset that results in less than PType max being sourced by the PSE."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.1** *P* **131** *L* **1** # 150

Stewart, Heath Linear Technology

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

All single-signature PDs must be able to operate over Mode A and B. The existing text allows single-signature PDs above class 4 and dual-signature PDs to operate over only one Mode.

SuggestedRemedy

Change
Single-signature PDs with a power demand lower or equal to Class 4 power shall be able to operate per the PD Mode A column and the PD Mode B column in Table 33–21.

to

PDs shall be able to operate per the PD Mode A column and the PD Mode B column in Table 33–21.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.1** *P* **131** *L* **11** # 98

Jones, Chad Cisco

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

"The PD shall withstand any voltage from 0 V to 57 V at the PI indefinitely without permanent damage." we know this sentence had problems and we've tried to fix it. I have one more stab at it in the suggested remedy.

SuggestedRemedy

change to: The PD shall withstand any voltage from 0 V to 57 V according to any of the permitted pinouts in Table 33-4 at the PI indefinitely without permanent damage.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.2** *P* **132** *L* **3** # 151

Stewart, Heath Linear Technology

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

Type 1 and 2 PDs cannot be constructed as dual-signature PDs. This is out of scope of our work as a Task Force. See Table 33-22.

SuggestedRemedy

Change lines
PDs can be constructed as single-signature or dual-signature as defined in 1.4 and 33.3.5.

to
Type 3 and Type 4 PDs can be constructed as single-signature or dual-signature as defined in 1.4 and 33.3.5.

or
PDs can be constructed as single-signature
or dual-signature as defined in 1.4 and 33.3.5 and shown in Table 33-22.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.2** *P* **132** *L* **26** # 103

Jones, Chad Cisco

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

We must hate the end users of our document because we have made one of the most unreadable specs I have ever seen (only further cements that we messed up by not making this it's own clause, but I digress). Here we introduce the concept of Type 1-4 and Class 0-8 but no where do we tell them what that means in terms of power - which I think is one of the main things a person will want to know when they are looking at specs for a POWERed device. This information doesn't come until page 151. At least be nice and tell them to look ahead to Table 33-27 and 33-28 to give the rest of the explanation.

SuggestedRemedy

after Table 33-22 or at the end of 33.3.2 add a new pargraph: For more information about the allowed PD power for each Type and Class see Table 33-27 and Table 33-28.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3** *P* **132** *L* **47** # 152

Stewart, Heath — Linear Technology

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

In all versions of the state machine variables section there is inconsistent use of white space to separate the enumated values the variable can hold and the description. Eg TRUE:description vs TRUE:<space>description vs TRUE:<tab>description

SuggestedRemedy

Change all variable descriptions to contain a <tab> between the enumerated value and the description.

Editor to be given license to implement this change.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.3** *P* **133** *L* **23** # 153

Stewart, Heath — Linear Technology

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

Use of a dash is non-traditional in a variable name. Reuse of the IEEE name will not be viable in most programming languages as "-" is reserved.

SuggestedRemedy

Change (globally)
pd_2-event

to
pd_2_event

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.5** *P* **136** *L* **5** # 24

Beia, Christian — STMicroelectronics

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

NOTE 2—In general, there is no requirement for a PD to respond with a valid classification signature for any DO_CLASS_EVENT duration less than TClass_PD as defined in Table 33–31:
Tclass_PD is a range, so it should be replaced with its max value.

SuggestedRemedy

Modify Note 2 as follows:
NOTE 2—In general, there is no requirement for a PD to respond with a valid classification signature for any DO_CLASS_EVENT duration less than TClass_PD max as defined in Table 33–31.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.7** *P* **136** *L* **48** # 154

Stewart, Heath — Linear Technology

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

Missing period at the end of the TRUE and FALSE descriptions

SuggestedRemedy

Add a period at the end of lines 48 and 49.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.7** *P* **137** *L* **11** # 155

Stewart, Heath — Linear Technology

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

Can a Type 3 PD draw Class 0 power?

SuggestedRemedy

Remove
0: PD may draw Class 0 power

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.7** *P* **138** *L* **4** # 139

Stewart, Heath — Linear Technology

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

present_det_sign value description references to over each pairset are inconsistent.

SuggestedRemedy

Change
invalid:A non-valid PD detection signature is to be applied to the link.
valid:A valid PD detection signature is to be applied to the link over each pairset.
either: Either a valid or non-valid PD detection signature may be applied to the link.

to
invalid:A non-valid PD detection signature is to be applied to the link over each pairset.
valid:A valid PD detection signature is to be applied to the link over each pairset.
either: Either a valid or non-valid PD detection signature may be applied to the link.

Globally change to the link to to the PI.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.7** *P* **138** *L* **17** # 224

Yseboodt, Lennart — Philips

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

Explanation of abbreviation MPS, is given after using abbreviation.
Move explanation two lines up.

SuggestedRemedy

Change to:
"Controls applying Maintain Power Signature (MPS) (see 33.3.8.10) to the PD's PI."
Remove explanation of MPS in False.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.7** *P* **138** *L* **24** # 140

Stewart, Heath — Linear Technology

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

pse_dll_power_type
A control variable output by the PD power control state diagram, defined in Figure 33–49, that
indicates the PSE Type as 1 or 2, see 79.3.2.4.1.

Values:
1: The PSE is a Type 1 PSE, for a Type 1 PSE
2: The PSE is a Type 2 PSE, for Type 2, Type 3, or Type 4 PSEs

As clear as this already is, perhaps it could be even more clear.

Generally the Type 3/4 single-signature definition of pse_dll_power_type and associated text in 33.3.7 PSE Type id has become imprecise in labeling Type 2, 3 and 4 PSEs as Type 2's.

Changing the variable enumerations to "is a Type 1" TRUE and FALSE seems like the easiest way forward.

SuggestedRemedy

See stewart_01_1116

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.8** *P* **138** *L* **40** # 225

Yseboodt, Lennart — Philips

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

Use of underscores in tacs_pd_timer not consistent with tinrushpd_timer.

SuggestedRemedy

Rename tacs_pd_timer to tacspd_timer in the draft.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.8** *P* **138** *L* **43** # 141

Stewart, Heath — Linear Technology

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

In the INRUSH state the PSE controls inrush, when tinrush expires the PD transitions to MDI_POWER1, then either begins to control inrush or transitions directly to its Pclass_PD state.

Note or is change to and to reflect the Miniumum(PDinrush, PDclass) function.

Also verb forms do not match (controls vs observe)

SuggestedRemedy

Change
tinrushpd_timer
A timer used to determine when the PD controls the input current, or observe PClass_PD power
limits; see TInrush_PD in Table 33–31.

to
tinrushpd_timer
A timer used to determine when the PD exits the INRUSH state and begins to either control the input current, and observe PClass_PD power
limits; see TInrush_PD in Table 33–31.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.9** *P* **139** *L* **1** # 142

Stewart, Heath — Linear Technology

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

do_class_timing is only performed in the first class event.

SuggestedRemedy

Change
measuring the length of the class event.

To
measuring the length of the first class event.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.10** *P* **141** *L* **28** # 118

Schindler, Fred — Seen Simply, Cisco, T

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

The Type 3 and 4 Single Signature PD state diagram prevents DLL from increasing power demand when the PSE power budget has increased. This occurs because the variable pse_power_level and pd_req_class is not changed when the PDMaxPowerValue is increased.

SuggestedRemedy

On page 150 modify the second column of Table 33-25 from “Assigned Class” to
“ Assigned Class
pse_power_level
pd_req_class”

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.10** *P* **141** *L* **46** # 25

Beia, Christian — STMicroelectronics

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

Figure 33-32
The exit conditions from DLL_ENABLE state differ from the original Visio file

SuggestedRemedy

Replace exit condition to P1 with pse_dll_power_type=1 (it is pse_power_type=3 in D2.1), and exit condition to P2 with pse_dll_power_type>1 (it is pse_power_type>3 in D2.1)

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.10** *P* **142** *L* **1** # 143

Stewart, Heath — Linear Technology

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

DO_CLASS_EVENT6 only deals with the 6th and higher events.

SuggestedRemedy

Change
NOTE 1—DO_CLASS_EVENT6 creates a defined behavior for a Type 3 or Type 4 PD that is brought into the classification range repeatedly.

To
NOTE 1—DO_CLASS_EVENT6 creates a defined behavior for a Type 3 or Type 4 PD that is brought into the classification range more than 5 times.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.11** *P* **142** *L* **7** # 37

Darshan, Yair Microsemi

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

The introductory part for dual-signature state machine was not implemented as specified in page 11 lines 3-7 in darshan_09_0916Rev005.pdf from last comment resolution.
In addition, the suffix _modeY' was changed to "_mode(M)" in order to sync with D2.1.

SuggestedRemedy

Add the following text to 33.3.3.11 on page 142 after line 7:
"The following are the requirements for dual-signature PD state machine over each modeA and modeB. The dual-signature state machine shall be implemented over each pairset for mode A and mode B independently unless otherwise specified. All the parameters that applies to mode A and mode B are denoted with the suffix "_mode(M)" where "M" can be "A" or "B". A parameter that ends with the suffix "_mode(M)" may have different values for mode A and mode B."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.11** *P* **142** *L* **7** # 74

Darshan, Yair Microsemi

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

Dual-signature state machine needs some updates.
See darshan_17_1116.pdf.

SuggestedRemedy

Adopt darshan_17_1116.pdf.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.12** *P* **142** *L* **42** # 144

Stewart, Heath Linear Technology

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

Can a Type 3 PD draw Class 0 power?

SuggestedRemedy

Remove
0: PD may draw Class 0 power

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.12** *P* **143** *L* **43** # 67

Darshan, Yair Microsemi

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

pse_dll_power_level_mode(M) variable is not used in the dual-signature PD state machine.

SuggestedRemedy

Delete pse_dll_power_level_mode(M) variable.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.12** *P* **143** *L* **53** # 68

Darshan, Yair Microsemi

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

In the text:
"pse_dll_power_type
A control variable output by the PD power control state diagram (Figure 33-49) that indicates the PSE Type connected to Mode M as 1 or 2, see 79.3.2.4.1."

pse_dll_power_type variable definition has an error. It can't be per mode.

SuggestedRemedy

Change from:
"pse_dll_power_type
A control variable output by the PD power control state diagram (Figure 33-49) that indicates the PSE Type connected to Mode M as 1 or 2, see 79.3.2.4.1."
To:
"pse_dll_power_type
A control variable output by the PD power control state diagram (Figure 33-49) that indicates the PSE Type connected to the PD as 1 or 2, see 79.3.2.4.1."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.12** *P* **144** *L* **7** # 108

Picard, Jean Texas Instruments

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

VPD_mode(M) is defined, but VPD(M) is used instead in the SD of figure 33-33.

SuggestedRemedy

Define instead VPD(M).

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.13** *P* **144** *L* **10** # 226

Yseboodt, Lennart Philips

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

Empty line above subsection title is missing.
- 33.3.3.13
- 33.3.3.14

SuggestedRemedy

Add empty line

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.13** *P* **144** *L* **16** # 227

Yseboodt, Lennart Philips

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

"tpowerdly_timer_mode(M): A timer used to prevent Class 4 Type 3 dual-signature PDs from drawing more than Type 1 power over Mode M and Class5 Type 4 dual-signature PDs from drawing more than Class 2 power over Mode M during the PSE's inrush period; see Tdelay-2P in Table 33-31."

Needs to be updated per the tpowerdly_timer description.

SuggestedRemedy

Change to:
"A timer used to prevent Type 3 and Type 4 PDs from drawing more than I Inrush_PD and I Inrush_PD-2P during the PSE's inrush period; See T delay-2P in Table 33-31."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.13** *P* **144** *L* **17** # 228

Yseboodt, Lennart Philips

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

"A timer used to prevent Class 4 Type 3 dual-signature PDs from drawing more than Type 1 power over Mode M and Class5 Type 4 dual-signature PDs from drawing more than Class 2 power over Mode M during the PSE's inrush period; see Tdelay-2P in Table 33-31."

Class5 is missing space.

SuggestedRemedy

Fix.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.15** *P* **144** *L* **33** # 16

Beia, Christian STMicroelectronics

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

This paragraph should be placed before the descriptions of constants and variables where the generic Mode designator M is also used.

SuggestedRemedy

move paragraph 33.3.3.15 right after 33.3.3.1

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.15** *P* **144** *L* **42** # 146

Stewart, Heath Linear Technology

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

The variable does not contain value: description pairs. Instead they have to be pulled out of the description header.

SuggestedRemedy

Change:
PD Modes are referred to by the letter ‘A’ or ‘B’ for Mode A and Mode B respectively. Mode information is obtained by replacing the M in the desired variable or function with the letter of the Mode of interest. Modes are referred to in general as follows:
M
Generic Mode designator. When M is used in a state diagram, its value is local to that state diagram and not global to the set of state diagrams.

to
Dual-signature PDs are implemented on Mode A and Mode B (see 33.3.1). Mode information is obtained by replacing the M in the desired variable or function with the letter of the Mode of interest. Modes are referred to in general as follows:
M
Generic Mode designator. When M is used in a state diagram, its value is local to that state diagram and not global to the set of state diagrams.
A: Mode A
B: Mode B

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.16** *P* **145** *L* **13** # 229

Yseboodt, Lennart Philips

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

In DO_CLASS_EVENT1 the variable "do_class_timing__mode(M)" has two underscores.

SuggestedRemedy

Change to "do_class_timing_mode(M)"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.16** *P* **146** *L* **1** # 145

Stewart, Heath Linear Technology

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

Why does a Type 3 or 4 single-signature PD require the INRUSH state while a dual-signature PD does not?

SuggestedRemedy

Add INRUSH state as in single-signature Type 3/4 PD SM

Proposed Response *Response Status* **O**

Cl **33FRO** *SC* **33.3.3.16** *P* **146** *L* **13** # 83

Darshan, Yair Microsemi

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

1. The exit from MDI_POWER1 state to MDI_POWER2 through MDI_POWER_DLY state can be simplified (as done for the single-signature PD state machine) by replacing the exit conditions from MDI_POWER1 to MDI_POWER_DLY from:
(pse_power_level_mode(M) > 3) + (pse_dll_power_type >1)

To: ((pse_power_level_mode(M) > 3) + (pse_dll_power_type >1))*tpowerdly_timer_done_mode(M)
2. Now the MDI_POWER_DLY state and the exit from it can be deleted and resulted with MDI_POWER1 is directly connected to MDI_POWER2.

SuggestedRemedy

To adopt the proposal above.
See SM drawing darshan_16_1116.pdf for the proposed changes.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.16** *P* **146** *L* **16** # 230

Yseboodt, Lennart Philips

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

The dual-signature state diagram in Figure 33-33 does not have an INRUSH state like single-signature has.

SuggestedRemedy

Implement INRUSH state into Figure 33-33, with the same principle as used in Figure 33-32.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.16** *P* **146** *L* **40** # 69

Darshan, Yair Microsemi

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

1. In the exits from DLL_ENABLE it should be pse_power_level and not pse_power_type. See page 20 at darshan_09_0916Rev005.pdf approved remedy from September 2016 meeting.
2. In addition we have to add the suffix _mode(M) to pse_power_level.

SuggestedRemedy

Change the variable name in figure 33-33 page 146 line 40 from:"pse_power_type"
To: "pse_power_level_mode(M)"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.4** *P* **147** *L* **8** # 102

Jones, Chad Cisco

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

I feel very strongly that we sold the formation of this standard based on efficiency and the ability to lower cable loss. We went one step further and promised the WG that we would not raise the power allowed over a 2P system above 30W. And then the Dual Signature PD was used as a trojan horse to sneak this ability into the standard. There is not one piece of text that states that a DS PD that draws power only from one pairset must not draw more than Type 2 power. I am resolute that a PD that wants more than 30W shall do so using 4P. Presently, the only penalty for a designer that wants more than 30W but doesn't want to implement a 4P design is that they have to have a valid detection signature on the unpowered pair. This is not much of an impediment to misbehavior.

SuggestedRemedy

add these sentences to the end of paragraph 2 on page 147 (at line 8): A Type 4 dual-signature PD that is powered over only one pairset shall only draw class 4 power from that pairset until it is powered on both pairsets. This prevents the intentional design of a PD to exceed Type 2 power on only 2P.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.4** *P* **147** *L* **48** # 231

Yseboodt, Lennart Philips

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

Table 33-23, valid pd detection sig.
The series input inductance is listed as 0.100 mH.

SuggestedRemedy

Change dimension to micro, 100 uH

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8.2.1** *P* **148** *L* **37** # 59

Darshan, Yair Microsemi

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

(This comment was in TDL from comment #47 D2.0)

"...the PD may consume greater than PClass_PD but shall not consume greater than PClass at the PSE PI."

Problem: Equation 33-2 defines Pclass by Rchan and Pclass_PD. If a PD consumes more than Pclass_PD, it will by definition cause Pclass in equation 33-2 to be exceeded.

SuggestedRemedy

If not resolved yet for D2.1, add it to the TDL for the next draft.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5** *P* **148** *L* **45** # 232

Yseboodt, Lennart Philips

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

Empty line above -- Mode A.

SuggestedRemedy

Remove empty line.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.6** *P* **149** *L* **6** # 121

Schindler, Fred Seen Simply, Cisco, T

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

It is not clear what the definitions of “advertised Class by the PD” (page 149 Line 6, page 157 Line 21) and “requested Class by a PD” (page 149 Line 30) are. See a related comment, marked COMMENT-1 for comments on requested Class. Both of these terms seem to indicate the maximum class a PD would request if connected to a PSE without a power budget limitation. Also see a related comment, marked COMMENT-2.

SuggestedRemedy

If the definition is the same for both terms replace “advertised Class” with “requested Class.” If the advertised class is the maximum class a PD would request if connected to a PSE without a power budget limitation, then on page 149 add the following to the last sentence on line 7. “The advertised Class by the PD is the maximum class a PD would request when classification probed by a PSE without a power budget limitation.”

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.6** *P* **149** *L* **6** # 119

Schindler, Fred — Seen Simply, Cisco, T

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

The existing text, “The Class advertised by the PD during Physical Layer classification is the maximum power that a Type 3 or Type 4 PD shall draw.” Should be clarified to allow, already agreed upon operational states where a power limited PSE stops its physical layer classification at a point within its budget (page 106, line 11). After this point, the PSE may have its budget increase, due to a system power budget change, and use DLL to move the previously power constrained PSE port to a higher power level. The upper power level is limited by what the PD will request using physical layer classification if the PSE uses all classification events allowed.

The advertised Class of a PD is not defined and is not used in the OPTION-1 solution. See a related comment marked COMMENT-2 for details related to OPTION-2 solution.

SuggestedRemedy

OPTION-1:
Replace the called out sentence with,
“The Class advertised by the PD during Physical Layer classification is the maximum power that a Type 3 or Type 4 PD shall draw before DLL is utilized. A Type 3 or Type 4 PD shall draw no more than the Class advertised by the PD during Physical Layer classification when classification probed by a Type-4 PSE that has no power budget limitation. “

OPTION-2: (if COMMENT-2 is accepted, and preferred)
No change to the text called out in this comment.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.6** *P* **149** *L* **6** # 233

Yseboodt, Lennart — Philips

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

"The Class advertised by the PD during Physical Layer classification is the maximum power that a Type 3 or Type 4 PD shall draw."

A more appropriate word for 'advertised' is 'requested' since we also use that term in Table 33-13.
Guide:
- advertise a class signature (PD)
- request a Class (PD)
- assign a Class (PSE)

SuggestedRemedy

"The Class requested by the PD during Physical Layer classification is the maximum power that a Type 3 or Type 4 PD shall draw."

There seems to be no PICS for this: add PICS for this requirement.

There are more of these:
- page 132, line 35, replace advertise by request
- page 132, line 39, replace advertise by request (2x)
- page 132, line 42, replace advertise by request (2x)
- page 149, line 6 (this one)
- page 151, line 53, replace advertise by request
- page 153, line 15, replace advertise by request
- page 157, line 22, replace advertise by request

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.6** *P* **149** *L* **9** # 234

Yseboodt, Lennart — Philips

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

"A PD may be classified by the PSE based on the Physical Layer classification information, Data Link Layer (DLL) classification, ..."

Inconsistent and bad flow.

SuggestedRemedy

"A PD may be classified by the PSE based on Physical Layer classification , Data Link Layer (DLL) classification, ..."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.6** *P* **149** *L* **20** # 147

Stewart, Heath — Linear Technology

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

Awkward phrasing. Break into two sentences.

SuggestedRemedy

Change
Type 1 PDs and Type 3 Class 1 to 3 PDs optionally provide Data Link Layer classification (see 33.5) while Type 2 PDs, Type 3 Class 4 to 6 PDs, Type 4 PDs, and dual-signature PDs shall provide DLL classification.

To
Type 1 PDs and Type 3 Class 1 to 3 PDs optionally provide Data Link Layer classification (see 33.5). Type 2 PDs, Type 3 Class 4 to 6 PDs, Type 4 PDs, and dual-signature PDs shall provide DLL classification.

PIC is unaffected.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.6** *P* **149** *L* **30** # 148

Stewart, Heath — Linear Technology

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

Description of the requested class is inconsistent with a prior definition on line 10 same page. Add the word maximum.

SuggestedRemedy

Change
The requested Class of the PD is the amount of power the PD requests from the P

To
The requested Class of the PD is the maximum amount of power the PD requests from the PSE

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.6** *P* **149** *L* **30** # 120

Schindler, Fred — Seen Simply, Cisco, T

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

The existing text, “The requested Class of the PD is the amount of power the PD requests from the PSE, as defined in 33.3.6.1 and 33.3.6.2.” is not always measurable. For example, a PD that requests class 8 from a PSE only supporting a class-4 power budget would results in class events 4, 4, which would provide requested class-4. If the PSE can support class-5 then another event would occur resulting in events 4, 4, 3, which could be a result from a PD requesting class 8 or from something else that may result in an unexpected series of class values (see page 136, pd_req_class). The PSE does not know the real PD requested class value because the PSE power budget limits how many events the PSE produces. This understanding does not change system operation but should be pointed out to the reader. The existing text should also be expressed better. Is there a real benefit making pd_req_class 8, for this case, rather than 5? Was that even the intent?

SuggestedRemedy

OPTION-1:
Replace the called-out text with, “The requested Class of the PD is the highest class a PSE establishes, as defined in 33.3.6.1 and 33.3.6.2. The PSE classification events produced are limited by the PSE power budget. The requested Class of the PD provided may assume that the last class value will repeat if probed for the maximum number of class event times possible for a full-powered PSE.”

OPTION-2: (preferred)
Replace the called-out text with, “The requested Class of the PD is the highest class a PSE establishes, as defined in 33.3.6.1 and 33.3.6.2. The PSE classification events produced are limited by the PSE power budget.”

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8.3** *P* **149** *L* **30** # 61

Darshan, Yair Microsemi

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

(TDL #460 from D2.0)

Lennarts comment #460 from D2.0.
"If a PD has a larger C Port or C Port-2P value, then the PD shall limit the input inrush current such that I Inrush_PD max and I Inrush_PD-2P max, as defined in Table 33-28, are met."
Very true, but also redundant to the requirement a few paragraphs above:
"PDs shall draw less than I Inrush_PD and I Inrush_PD-2P from T Inrush-2P min until T delay-2P min."
SuggestedRemedy
Remove the "If a PD has a larger..." sentence.
ACCEPT.
Add to the TDL: Darshan, Make sure removal of shall on page 149, line 30 in D2.0 does not cause issues.

SuggestedRemedy

See darshan_03_1116.pdf.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.6** *P* **149** *L* **31** # 235

Yseboodt, Lennart Philips

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

"Depending on the number of class events produced by the PSE, the assigned Class is equal to the requested Class, or it may be lower."

Use of the word 'may' is inappropriate in this context as the PD is not the actor here.

SuggestedRemedy

"Depending on the number of class events produced by the PSE, the assigned Class is equal to the requested Class, or it can be lower."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.6** *P* **149** *L* **35** # 93

Jones, Chad Cisco

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

The PD class section is weak on the statement that a PD may not request more power via LLDP than was requested on the physical layer. Yes it is stated on line page 49 line 5 and line 32, but it is vague.

SuggestedRemedy

after this sentence on line 35: "After a successful DLL classification, the assigned Class changes depending on the value of 35 PDMaxPowerValue variable, as defined in Table 33–25."
add: "DLL classification cannot be used to negotiate to a higher class than the one requested by physical layer classification."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.6.1** *P* **149** *L* **43** # 26

Beia, Christian STMicroelectronics

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

Despite of the title, 33.3.6.1 deals with both single and multiple-event class signature.

SuggestedRemedy

Merge 33.3.6.1 and 33.3.6.2 in one subclause.
Change the title to PD class signature

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.6.1** *P* **150** *L* **21** # 94

Jones, Chad Cisco

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

the sentence: "Type 1 PDs may choose to implement a Multiple-Event class signature and return Class 0, 1, 2, or 3 in accordance with the maximum power draw, PClass_PD." is a weird statement. What does a PSE or PD gain by performing multievent class using only 0,1,2, or 3?

SuggestedRemedy

is this here simply to allow a Type 1 PD to set pd_2-event to TRUE (and therefore keeping the SD less complex?) if so, can we say that here to give a clue why the sentence exists?
Add: "Type 1 PDs are allowed to set pd_2-event to TRUE." after the first sentence in the paragraph on page 150, line 21.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.6.2** *P* **151** *L* **49** # 236

Yseboodt, Lennart Philips

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

"Type 3 and Type 4 PDs shall conform to the electrical requirements as defined by Table 33-31 for the level defined in the pse_power_level state variable."

pse_power_level does not equate to the assigned Class, which is what the PD needs to conform to.

SuggestedRemedy

"Type 3 and Type 4 PDs shall conform to the electrical requirements as defined by Table 33-31 per the Class in the pd_max_power variable or pd_max_power(M) variable."

Also, move this paragraph to page 152, line 16.

Update PICS PD30 to match.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.6.2** *P* **152** *L* **9** # 122

Schindler, Fred Seen Simply, Cisco, T

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

The explanation of how DLL may alter PD variables to affect classification is spread over widely-separated points, which may lead to confusion. See points on page 149 line 35, Table 33-25 on page 150, and page 152 line 5.

SuggestedRemedy

Add a cross reference to the end of text on page 152 line 9.
"… the variable pd_max_power. DLL affects pd_max_power indirectly by changing PDMaxPowerValue shown in Table 33-25."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.6.3** *P* **153** *L* **5** # 91

Jones, Chad Cisco

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

need a pointer back to PSE autoclass section after the first paragraph in 33.3.6.3

SuggestedRemedy

add "see 33.2.7.3" at the end of the first paragraph in 33.3.6.3

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.6.3** *P* **153** *L* **19** # 156

Stover, David Linear Technology

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

Units for Table 33-18 and Table 33-30 (PSE and PD Autoclass timing, respectively) are mismatched.

SuggestedRemedy

Specify all items in Table 33-30 in seconds, to match PSE Table 33-18.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7** *P* **153** *L* **41** # 237

Yseboodt, Lennart Philips

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

"Type 3 and Type 4 PDs may determine the Type of the PSE they are connected to by measuring the length of the first class event. The default value for long_class_event is FALSE, which indicates the PSE is a Type 1 or Type 2 PSE. The PD may set long_class_event to TRUE if the first class event is longer than TLCE_PD min and shall set long_class_event to TRUE if the first class event is longer than T LCE_PD max."

A PD is not required to measure the length of the LCE.
This text has an unconditional shall in it.

SuggestedRemedy

"Type 3 and Type 4 PDs may determine the Type of the PSE they are connected to by measuring the length of the first class event. Such PDs shall set long_class_event to FALSE if the first class event is shorter than T_LCE_PD min, and shall set long_class_event to TRUE if the first class event is longer than T_LCE_PD max."

Add these requirements to the PICS.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7** *P* **153** *L* **44** # 149

Stewart, Heath Linear Technology

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

Missing period..

SuggestedRemedy

Add period at the end of
This determination allows the PD to make use of short MPS to reduce standby power

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.6.3** *P* **153** *L* **44** # 238

Yseboodt, Lennart Philips

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

No period at end of sentence: "This determination allows the PD to make use of short MPS to reduce standby power"

SuggestedRemedy

Add period.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8** *P* **154** *L* **1** # 239

Yseboodt, Lennart Philips

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

As we did for the PSE Table, we should use "per the assigned Class" in the PD Table 33-31.

SuggestedRemedy

Use the construction "per the assigned Class" throughout Table 33-31 where appropriate.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8** *P* **154** *L* **37** # 240

Yseboodt, Lennart Philips

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

Table 33-31, item 6 and item 7 (Iinrush_PD and IInrush_PD-2P) both say in the additional information column "Peak value --- See 33.3.8.3".
What on earth does that 'peak value' refer to ?

I traced it back all the way to 802.3af where it also says "peak value".
It then points to the PD inrush section, where there is no mention of a peak value.
Does it refer to the PSE inrush peak value ?

SuggestedRemedy

Replace by "See 33.3.8.3"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8** *P* **154** *L* **42** # 78

Darshan, Yair Microsemi

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

This comment is marked "Iinrush_mess".
The changes made to D2.1 Table 33-31 item 6 IInrush_PD and item IInrush_PD-2P for "PD Type" column are incorrect compared to the baselines approved on this topic at:
(a)May 2016, http://www.ieee802.org/3/bt/public/may16/darshan_01_0516_Rev006.pdf
(b)March 2016, http://www.ieee802.org/3/bt/public/mar16/darshan_09_0316R6.pdf

The changes in D2.1 for item 7 were made as a response to comment #522 and #523 in D2.0:
Comment #522 from David Stover was marked as editorial and should have been technical although it was justified but not addressed properly and was OBE by comment #523 from Lennart.
Comment #523 marked as ER, but actually was technical and didn't supply explanation to the requested change and the remedy was to adopt Lennart's "remedy file" for comment #523: http://www.ieee802.org/3/bt/public/sep16/yseboodt_09_0916_commentsd2p0.pdf without supplying any clear rationale.
The changes in D2.1 for item 6 were made as a response to comment #523 in D2.0:

Checking the drafts against the above baselines show that the above baselines started to be implemented on May 2016 due to March 2016 baseline http://www.ieee802.org/3/bt/public/may16/darshan_01_0516_Rev006.pdf:
D1.7 item 6 was implemented correctly. Item 7 was not.
D1.8 item 6 was implemented correctly. Item 7 was not.
D2.0 is identical to D1.8
D2.1 both items 6 and 7 are not according to the approved baselines above due to comment #523 from D2.0.

So first thing is to update D2.1 based on the last approved baseline from March 2016, http://www.ieee802.org/3/bt/public/mar16/darshan_09_0316R6.pdf as approved with the updates made by comments up to D1.8.

Based on my discussion with Lennart he thought that there is editorial error (one row didn't have a value for the PD Type) but he didn't check the baseline so one error led to more errors and it turned to be a major technical change in D2.1.
A later argument made by Lennart of why he proposed this change was "that this is the "assigned class" so A Type 4 SS PD will request Class 7 or 8, but if it gets power demoted to Class 6, it is still a Type 4 PD." This argument is technically incorrect (any how it can't be editorial change anymore).
Here is the problem.
A Type 4 SS PD connected to Type 4 PSE will _request_ Class 7 or 8, but if it gets power demoted to Class 6, it is still a Type 4 PD and hence still need Inrush values of class 7-8 AND NOT inrush values of class 6 because PD can't change its input capacitance and inrush circuitry as function of class..it can't work..
What if A Type 4 SS PD connected to Type 2 PSE?
In this case regardless of the PD inrush needs, The PSE can supply only 0.4A to 0.45A. So the PD may or may not work due to Iinrush and also due to not sufficient power so it is

not important if it is the assigned class or the advertised class.
As a result, we need to restore the types that we have in the approved base line from May 2016 with the approved comments up to D1.8.
In addition in order to prevent confusion, we may need to consider changing the title of item 6:
From:
" Input inrush current as function of the assigned Class, when the PD is limiting the current during the inrush period per 33.3.8.3."
To:
"Input inrush current when the PD is limiting the current during the inrush period per 33.3.8.3."
The same issues with Item 7 Iinrush-2P.
This will prevent the confusion that the assigned class affect PD Iinrush requirements.
The main problems that I see resulting from the changes in D2.1 in Table 33-31 items 6 and 7 are:
1.First implement the approved baseline from May 2016. We can start the discussion from this point again.
2. PD can't change its Iinrush, Inrush-2P requirements as a function of its assigned class. PD Iinrush and Inrush-2P are designed per the advertised class. PD can't switch Input capacitors and Inrush circuitry.
3. One undesired outcome from the changes in D2.1 that says that Type 7,8 PDs can have assigned class 0-6 is that it opens the door to Type 4 PDs that are only permitted to be class 7 and 8, to be designed for lower classes than class 7 and work only at lower classes. It doesn't mean that PD can't work with reduced power mode when there is no class 7-8 available power but this feature has nothing to do with the assigned class feature that is not relevant to Iinrush function.

SuggestedRemedy

Adopt darshan_18_1116.pdf.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8** *P* **154** *L* **42** # 79

Darshan, Yair Microsemi

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

(Resubmitting comment #522 from David Stover so we can address it properly.)
(I am not resubmitting #523 from Lennart due to the fact that the comment and remedy was based on the assumption that it is editorial and as a result was not discussed at all and rationale was not supplied for the change. We can address it by my comment marked "Iinrush_mess")
Table 33-31 item 6 IInrush_PD class 0-6: The PD Type is "ALL" but it need to be "1,2,3" since Class 6 is only valid in Type 3 PD and not Type 4.

SuggestedRemedy

Table 33-31 item 6 IInrush_PD class 0-6:
1. Change "PD Type" from "ALL" to "1,2,3".
2. Group to discuss if Iinrush and Iinrush-2P need to be a function of the assigned class or not. There are issues with this concept. See darshan_18_1116.pdf.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8** *P* **155** *L* **18** # 241

Yseboodt, Lennart Philips

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

Table 33-31, item 7, T_Inrush_PD has PD Type = "3, 4".
The relevant requirement in 33.3.8.3 applies also to Type 2 PDs.

SuggestedRemedy

Change PD Type for Item 7 to "2, 3, 4".

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8** *P* **155** *L* **18** # 27

Beia, Christian STMicroelectronics

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

Table 33-31
Item 7 is defined twice

SuggestedRemedy

Renumber Tinrush_PD as Item 8 and the following items accordingly.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8** *P* **155** *L* **21** # 242

Yseboodt, Lennart Philips

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

Table 33-31, item 8, T_delay-2P, has PD Type = "3, 4".
It also applies to Type 2 PDs.

SuggestedRemedy

Change PD Type for Item 8 to "2, 3, 4".

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8** *P* **156** *L* **16** # 243

Yseboodt, Lennart Philips

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

In footnote of Table 33-31:
"The maximum PPort_PD may be limited to less than PClass_PD for dual-signature PDs that are influenced by external unbalance in order to meet the requirements of 33.3.8.10."

This cryptic sentence refers to dual-signature PDs, implemented with a single load. These devices may not reach Pclass_PD-2P because there is no provision for unbalance for dual-sig PDs.

This footnote only creates confusion.

SuggestedRemedy

Remove this sentence from the footnote.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8.1** *P* **157** *L* **11** # 244

Yseboodt, Lennart Philips

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

"The PD shall turn on at a voltage less than or equal to V On_PD . After the PD turns on, the PD shall stay on over the entire V Port_PD-2P range. The PD shall turn off at a voltage less than V Port_PD-2P minimum and greater than or equal to V Off_PD."

- Is at odds with both the Type 1/2 and Type 3/4 state diagrams
- Allows the PD to turn on at any voltage lower than 42V

SuggestedRemedy

Adopt yseboodt_02_1116_vonvoff.pdf

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8.2** *P* **157** *L* **20** # 245

Yseboodt, Lennart Philips

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

"PClass_PD and PClass_PD-2P in Table 33-31 are determined by the Class assigned by the PSE."
Sentence can be simplified.

SuggestedRemedy

"PClass_PD and PClass_PD-2P in Table 33-31 are determined per the PSEs assigned Class."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8.2.1** *P* **157** *L* **37** # 62

Darshan, Yair Microsemi

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

33.3.8.2.1, 33.3.8.4 and 33.3.8.4.1 needs some update to differentiate between single-signature PDs and dual-signature PDs.
This is continuation of the work done for comment #512 from D2.0 to cover the rest of the clauses content that we didn't review.

SuggestedRemedy

Addopt darshan_09_1116.pdf

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8.2.1** *P* **157** *L* **38** # 32

Bennett, Ken — Sifos Technologies, In

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

TDL 2.0 comment #47 pointed out that an upper limit for PClass was not clearly defined. The suggested remedy adds a secondary limit based upon Icable. (if accepted, this would OBE TDL 2.0 #47.)

Existing Text:

...may consume greater than PClass_PD but shall not consume greater than PClass at the PSE PI.

SuggestedRemedy

Append the following to the existing text:

and shall not draw current in excess of Icable as defined in Table 33-1.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8.2.2** *P* **157** *L* **47** # 60

Darshan, Yair — Microsemi

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

From the TDL, comment #383 D2.0:
Yair to rewrite 33.3.8.2.2, page 157 lines 46-54 without SHALL.

SuggestedRemedy

Change lines 46-54 only from:
"When a Type 1, Type 2, single-signature Type 3, or single-signature Type 4 PD is supplied with V Port_PSE-2P min to V Port_PSE-2P max with R Ch (as defined in Table 33-1) in series, it shall operate at PPort_PD , as defined in Table 33-28, with the ripple and noise content as defined in Table 33-28, and with the DC input operating voltage range as defined by Table 33-28.

When a dual-signature PD is supplied with V Port_PSE -2P min to V Port_PSE-2P max with R Ch (as defined in Table 33-1) in series, it shall operate at PPort_PD-2P , as defined in Table 33-28, with the ripple and noise content as defined in Table 33-28, and with the DC input operating voltage range as defined by Table 33-28."

To:
"Verification of a PD is achieved when PD ripple and noise content as defined in Table 33-28 is met while the PD is powered with a voltage source set in the range of VPort_PSE-2P min to VPort_PSE-2P max with R Ch (as defined in Table 33-1) in series, and PD load is operate at or below PPort_PD_max."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8.3** *P* **158** *L* **11** # 246

Yseboodt, Lennart — Philips

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

"PDs shall draw less than I Inrush_PD and I Inrush_PD-2P from T Inrush-2P min until T delay-2P min."

Uses a PSE timing parameter.
We have created Tinrush_PD for this purpose.

SuggestedRemedy

"PDs shall draw less than I Inrush_PD and I Inrush_PD-2P from T Inrush_PD until T delay-2P min."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8.3** *P* **158** *L* **11** # 28

Beia, Christian — STMicroelectronics

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

Tinrush-2P min is defined in the PSE section in Table 33-19. In D2.1 the relevant parameter for the PD section is Tinrush-PD max in Table 33-31

SuggestedRemedy

Replace Tinrush-2P min (as defined Table 33-19) with Tinrush-PD max (as defined in table 33-31). 5 instances in 33.3.8.3

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8.3** *P* **158** *L* **18** # 48

Darshan, Yair — Microsemi

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

Missing "in" in the text, two locations marked with **in**:

Single-signature PDs assigned to Class 1, 2, or 3 shall conform to PClass_PD and PPeak_PD within TInrush-2P min as defined **in** Table 33-19. Type 3 and Type 4 dual-signature PDs assigned to Class 1, 2, or 3 shall conform to PClass_PD-2P and PPeak_PD-2P within TInrush-2P min as defined **in** Table 33-19 on that pairset.

SuggestedRemedy

Change the text to be:

"Single-signature PDs assigned to Class 1, 2, or 3 shall conform to PClass_PD and PPeak_PD within TInrush-2P min as defined in Table 33-19. Type 3 and Type 4 dual-signature PDs assigned to Class 1, 2, or 3 shall conform to PClass_PD-2P and PPeak_PD-2P within TInrush-2P min as defined in Table 33-19 on that pairset."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8.3** *P* **158** *L* **24** # 247

Yseboodt, Lennart — Philips

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

We have two shalls in the PD inrush section:
[1] PDs shall draw less than I Inrush_PD and I Inrush_PD-2P from T Inrush-2P min until T delay-2P min.
[2] The PD shall meet the inrush requirements with the PSE behavior described in 33.2.8.5.

I made a comment the previous cycle to remove [2] because I felt it was redundant to [1].
This is true, but there is more going on than I had realized.

There are two separate issues:
- [1] can only be met by a PD, when it is connected to a compiant PSE.
If the PSE does not provide enough inrush current, the PD cannot be expected to be compliant to [1].
The [1] statement is unconditional though.

- We need to warn the PD designer that it is allowed for PSEs to have severely restricted current capability at low VPSE.
This was the reason statement [2] was added to this section.
Statement [2] is still a redundant shall to [1] and it also fails to really warn about the low current behaviour of the PSE.

SuggestedRemedy

- Change [1] to read:
"PDs shall draw less than I Inrush_PD and I Inrush_PD-2P from T Inrush_PD until T delay-2P min, when connected to a source that meets the requirements of 33.2.8.5".

- Remove [2]

- Add the following to the NOTE on page 158, line 21, before the last sentence:
"PSEs may source a very limited current when VPSE is below 30V. See 33.2.8.5 for details."

- Update PICS PD49 and remove PD52

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8.3** *P* **158** *L* **35** # 29

Beia, Christian STMicroelectronics

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

Input inrush currents at startup, IInrush_PD and IInrush_PD-2P, as defined in Table 33–19,…
IInrush_PD and Iinrush_PD-2P are defined in table 33-31

SuggestedRemedy

Replace Table 33-19 with Table 33-31

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8.4** *P* **158** *L* **47** # 31

Bennett, Ken Sifos Technologies, In

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

There are two references to PClass_PD max. in this section. PClass_PD is a maximum, so "max" is redundant.

SuggestedRemedy

On lines 47 and 53, change:
..PClass_PD max..
to
..PClass_PD..

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8.4.1** *P* **160** *L* **5** # 33

Bennett, Ken Sifos Technologies, In

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

The extended mode peak section references PClass. Section 33.3.8.2.1 is expanding the average power limit beyond a simple PClass reference.

The suggested remedy changes the 33.3.8.4.1 PClass reference to Pport_PD max., which is the maximum PD avg power as determined under 33.3.8.2.1 rules. TDL 2.0 comment #48 would be OBE as a result of this change.

Existing Text:

...the peak power shall not exceed PClass at the PSE PI for more than TCUT-2P min, as defined in Table 33–19 and with 5% duty cycle. Peak operating power shall not exceed 1.05 × PPort_PD max.

SuggestedRemedy

Change:
...shall not exceed PClass...
to:
...shall not exceed Pport_PD max....

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8.5** *P* **160** *L* **33** # 34

Bennett, Ken Sifos Technologies, In

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

When TDL 2.0 comments #50 and #51 were discussed in the last meeting, it was pointed out that the graphs and related text repeat the "shalls" that exist in the average and peak power sections, were not clear, and could be deleted.

Subsequently, it was determined that (only) section 33.3.8.6 referenced those graphs. The suggested remedy removes the graphs and related text from 33.3.8.5, and modifies section 33.3.8.6 to remove the references and clarify that section.

SuggestedRemedy

See Bennett_01_1116.pdf

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8.6** *P* **162** *L* **48** # 248

Yseboodt, Lennart Philips

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

The requirements in 33.3.8.6 refer to "PClass_PD max" and "PClass_PD-2P max". Neither of these parameters is a range, but is a single power number.

SuggestedRemedy

Replace:
- "PClass_PD max" by "PClass_PD"
- "PClass_PD-2P max" by "PClass_PD-2P"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8.6** *P* **162** *L* **48** # 96

Jones, Chad Cisco

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

How can a Type 2 PD exceed “PClass_PD max” (see other comment to replace this with PPort_PD Max)? the only exception is listed in 33.3.8.2.1 and it is only for Class 6 and Class 8.

SuggestedRemedy

Move Type 2 to be included in the Type 1 sentence. Add 'see 33.3.8.2.1' to the Type 3 and Type 4 statements on lines 48 and 52. Also add 'see 33.3.8.2.1 to the Type 3 and Type 4 DS stuff on page 163 lines 3 and 6.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8.6** *P* **162** *L* **48** # 95

Jones, Chad Cisco

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

"PClass_PD max" is not a constant in this standard. It is stated in MANY places that PClass_PD IS THE MAXIMUM… if you look at T33-31, PPort_PD MAX = PClass_PD. Perhaps you mean for this to say PPort_PD Max?

SuggestedRemedy

lines 48 and 52, replace Pclass_PD max with Pport_PD MAX, two places.
Also page 163, lines 3 and 6, replace Pclass_PD-2P max with Pport_PD-2P MAX, two places.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8.10** *P* **164** *L* **46** # 30

Beia, Christian STMicroelectronics

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

Rsource_min and Rsource_max represent the Vin source common mode effective resistance that consists of the PSE PI components (RPSE_min and RPSE_max as specified in 33.2.8.4.1, VPort_PSE_diff as specified in Table
33–19, the channel resistance, and RPair_PD_min and RPair_PD_max specified in Annex 33A.5).
RPair_PD_min and RPair_PD_max are not part of the PSE PI components.

SuggestedRemedy

Remove RPair_PD_min and RPair_PD_max from the description on the PSE PI components:
Rsource_min and Rsource_max represent the Vin source common mode effective resistance that consists of the PSE PI components (RPSE_min and RPSE_max as specified in 33.2.8.4.1, VPort_PSE_diff as specified in Table
33–19 and the the channel resistance).

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8.10** *P* **165** *L* **24** # 43

Darshan, Yair Microsemi

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

In September 2016 meeting when Annex D was suggested to be added, good arguments where presented for why not to do it, as follows;
a) Information that is needed for interoperability needs to be in the standard body and not in the annex.
b) We need a set of requirements that will be sufficient for PSE PI design and PD PI design. We don't need to supply the reasons for the spec numbers as long as the current spec is complete and sufficient to guarantee interoperability.
c) Informative Annex is located far after clause 33 and there is a high chance to be overlooked if it contains information that is needed to properly design the PD.
All the above make a lot of sense. Therefore I suggest to move the design guidelines from Annex 33A.5 to the end of 33.3.8.10 as it is critical guidelines for PD designers to meet PD PI par-to-pair unbalance without guessing what to do...

SuggestedRemedy

1. Move the content of Annex 33A.5 to the end of 33.3.8.10 (page 165 after line 24).
2. Replace any reference to annex 33A.5 with 33.3.8.10.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.9** *P* **166** *L* **1** # 249

Yseboodt, Lennart Philips

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

"PDs using Autoclass shall use the I Port_MPS associated with the PD Class assigned by the PSE during Physical Layer classification."

This information applies to many parameters and is clearly marked in Table 33-33.
It is not needed to repeat it here.
Also, with DLL the assigned Class can change (and then the MPS value also changes).

SuggestedRemedy

Remove sentence.

Remove PICS PD82.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.9** *P* **166** *L* **10** # 49

Darshan, Yair Microsemi

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

Typo in Table 33-33 item 1 title "input current a function of the assigned Class to a single-signature PD"

"a" need to be "as a"

SuggestedRemedy

Change to:
"input current as a function of the assigned Class to a single-signature PD"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.4.1.1.1** *P* **167** *L* **53** # 250

Wendt, Matthias Philips

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

"A multiport NID complying with Environment A requirements does not require electrical power isolation between link segments."

Is a recursive statement within this section (Environment A requirements).

SuggestedRemedy

"An Environment A multiport NID does not require electrical power isolation between link segments."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.4.3** *P* **169** *L* **13** # 287

Zimmerman, George CME Consulting, Aqua

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

Table 33-35 Impedance balance limits are in a nonstandard notation - usually these are either called out as dB values in the header or have a straight (roman) dB after them, not in curly braces and dB in subscript.

SuggestedRemedy

Change middle column header to read "Impedance balance limit (dB)", delete curly braces and subscript dB. Alternatively, simply remove curly braces and make the dB normal font, not a subscript, with no change to column header

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.4.3** *P* **169** *L* **15** # 290

Zimmerman, George CME Consulting, Aqua

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

TDL #171 on D2.0 - significant digits - Table 33-35 and 33-36 frequency limits do not require the extra ".0" in the limit. This accuracy is unusual, inconsistent with the usual "3 sig fig" limit in clause 33, inconsistent with frequency limits in later tables, and inconsistent with PHY specifications and unnecessary.

SuggestedRemedy

delete ".0" from all frequency limits in tables 33-35 and 33-36 on pages 169 and 170

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.4.9** *P* **175** *L* **1** # 136
Shariff, Masood CommScope

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

Incorrect reference. ISO has reorgonized their standards to consolidate all generic requirements into ISO/IEC 11801-1

SuggestedRemedy

Change: ISO/IEC 11801 Edition 3

To: ISO/IEC 11801-1

Change Also on:
page 176 line 14
page 178 line 28

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.4.9** *P* **175** *L* **3** # 135
Shariff, Masood CommScope

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

Correct reference

SuggestedRemedy

Change : ANSI/TIA-568.D-0

To:ANSI/TIA-568.0-D

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.4.9** *P* **175** *L* **54** # 134
Shariff, Masood CommScope

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

Update reference to ISO/IEC 11801 since the new edition has the generic requirements consolidated into ISO/IEC 11801-1. ISO/IEC 11801 does not exist anymore.

SuggestedRemedy

Change all occurances of ISO/IEC 11801 without any date qualfiication to ISO/IEC 11801-1. The ones with dates, e.g. ISO/IEC 11801-2002, or ISO/IEC 11801-1995 can remain the same since they refer to older versions

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.4.9** *P* **175** *L* **54** # 137
Shariff, Masood CommScope

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

Update reference to the current published standard

SuggestedRemedy

Change : ANSI/TIA-568-C.0.

To: ANSI/TIA-568.0-D

Change also in:

Page 175 line 48

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.5** *P* **180** *L* **26** # 39
Darshan, Yair Microsemi

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

From TDL comment #214 D2.0:
33.5 Data Link Layer classification need to be updated in order to support dual-signature PD.
See darshan_13_1116.pdf for concept presentation.
See darshan_11_1116.pdf for proposed baseline.

SuggestedRemedy

Adopt darshan_11_1116.pdf if ready for the meeting. If not ready, keep it in the TDL.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.5.5** *P* **189** *L* **5** # 251
Yseboodt, Lennart Philips

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

Autoclass has not been properly described in 33.5.5.
D2.0 TDL #232, #316, #476, #503

SuggestedRemedy

Adopt yseboodt_04_1116_autoclassdll.pdf

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.8.2** *P* **190** *L* **1** # 35

Chabot, Craig UNH-IOL

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

To Satisfy comments numbered 158, 257, and 258 on D2.0, the PICS were updated to reflect the changes in the text apparent in D2.0 when compared to Clause 33 of 802.3-2015. These changes can be seen in detail in Chabot_01_1116

SuggestedRemedy

None. The changes made are already reflected in D2.1

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.6.3** *P* **190** *L* **5** # 289

Zimmerman, George CME Consulting, Aqua

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

TDL #538 on D2.0 - review environmental section - Recent changes in electrical codes may be relevant to installation and maintenance of systems governed by this standard. The reader should be advised to consult these documents, adding clarity to the statement about local and regional regulations. This change was also made in PoDL.

SuggestedRemedy

Insert the following new 2nd sentence in 33.6.3 following statement about sound installation practice and local regulations: "In particular, users are cautioned to be aware of the ampacity of cabling, as installed, and local codes and regulations, e.g., ANSI/NFPA 70 – National Electric Code® (NEC®), relevant to the maximum class supported."
Make the sentence beginning "In addition, Annex 55B..." start a new paragraph

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.6.5** *P* **190** *L* **27** # 288

Zimmerman, George CME Consulting, Aqua

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

TDL #538 on D2.0 - review environmental section - 'Application of any of the above voltages to the PI of a PSE or a PD shall not result in any safety hazard.' this is a shall, and was pointed out in the BZ and BU sponsor ballots that it is ill-defined and non-testable. Any safety hazard might include the attraction of wild boars, meteor showers, wildebeast stampede caused by the ringing telephone. Need to be specific. 802.3bz and 802.3bu fixed this by referring to the General safety and Network safety subclauses.

SuggestedRemedy

Change “Application of any of the above voltages to the PI of a PSE or a PD shall not result in any safety hazard.” to read ""Application of any of the above voltages to the PI of a PSE or a PD shall not preclude conformance with 33.6.1 and 33.6.2.”

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7** *P* **191** *L* **2** # 13

Anslow, Pete Ciena

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

Comment #180 against D2.0 was ACCEPT, but was not fully implemented:
Change "DTE Power via MDI" to "Data Terminal Equipment (DTE) Power via Media Dependent Interface (MDI)" in the title of 33.8 (now changed to 33.7) has not been done.

SuggestedRemedy

Change "DTE Power via MDI" to "Data Terminal Equipment (DTE) Power via Media Dependent Interface (MDI)" in the title of 33.7

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.2.3** *P* **192** *L* **5** # 252

Yseboodt, Lennart Philips

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

PICS PD Major option PDT1 is missing.

SuggestedRemedy

Add item PDT1.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.2.3** *P* **192** *L* **18** # 254

Yseboodt, Lennart Philips

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

Short MPS is not a capability.
PDs can use it when available.

SuggestedRemedy

Remove *PDSMPS from 33.7.2.3.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.2.3** *P* **192** *L* **18** # 253

Yseboodt, Lennart Philips

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

PICS *PDCL: Classification for PDT1, PDT3 and PDT4 is missing.

SuggestedRemedy

Add Status PDT1:O, PDT3:M, PDT4:M.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.2.3** *P* **192** *L* **31** # 255

Yseboodt, Lennart Philips

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

Item *DLLC: DLL support is optional for Type 1, and for Type 3 PDs that request Class 3 or lower.

SuggestedRemedy

Add Status PDT1:O.
Not sure how to fix the PDT3:M thing...

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.2.4** *P* **193** *L* **37** # 256

Yseboodt, Lennart Philips

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

*PCA Pair control was removed in the 33.5 Management purge.

SuggestedRemedy

Remove *PCA.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.3.2** *P* **194** *L* **41** # 257

Yseboodt, Lennart Philips

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

Larger fontsize is used for PSE6 and PSE7 Features.

SuggestedRemedy

Make fontsize the same.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.3.2** *P* **195** *L* **29** # 258

Yseboodt, Lennart Philips

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

"Issue no more than the Class they are capable of supporting between the most recent time VPSE was at VReset and a transition to POWER_UP"

In text "power up states" is mentioned and not POWER_UP.

SuggestedRemedy

Change to:
"Issue no more than the Class they are capable of supporting between the most recent time VPSE was at VReset and a transition to any of the power up states"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.3.2** *P* **195** *L* **45** # 259

Yseboodt, Lennart Philips

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

A PICS is missing for:
"Type 3 and Type 4 PSEs that will deliver power on both pairsets shall complete a connection check prior to the classification of a PD as specified in 33.2.7."
from 33.2.6.1 page 101 line 37

SuggestedRemedy

Add PICS for this shall.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.3.2** *P* **196** *L* **17** # 260

Yseboodt, Lennart Philips

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

In PICS PSE28:
"Not be damaged by up to 5 mA over the range of VPort_PSE-2P"
is the range VPort_PSE-2P wrong, this should be Voc.

SuggestedRemedy

Change to:
"Not be damaged by up to 5 mA up until a voltage of Voc"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.3.2** *P* **196** *L* **47** # 261

Yseboodt, Lennart Philips

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

"Stored in PD_4pair_cand, defined in 33.2.5.9" variable has lowercase letters.

SuggestedRemedy

"Stored in pd_4pair_cand, defined in 33.2.5.9"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.3.2** *P* **201** *L* **27** # 262

Yseboodt, Lennart Philips

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

PICS missing for page 121 line 52:

"A Type 2 PSE that uses Single-Event Physical Layer classification, and requires the 1 ms settling time, shall power up a Class 4 PD as if it used Multiple-Event Physical Layer classification."

SuggestedRemedy

Add this shall to new PICS item PSE95a.
(Note: are we adding a new requirement to Type 2 ??)

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.3.3** *P* **205** *L* **30** # 263

Yseboodt, Lennart Philips

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

A PICS is missing for page 149, line 32
"The PD shall conform to the assigned Class, regardless of the Class it requested."

SuggestedRemedy

Add PICS item PD21b

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.3.3** *P* **205** *L* **36** # 265

Yseboodt, Lennart Philips

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

On page 162 line 43 two PICS are missing for page 162:
"A single-signature PD shall include Cport as defined in Table 33-31."
"A dual-signature PD shall include CPort-2P as defined in Table 33-31 on each pairset."

SuggestedRemedy

Add to PICS, unless Ken's baseline no longer has this shall.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.3.3** *P* **205** *L* **36** # 264
Yseboodt, Lennart Philips

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

PICS missing for page 151, line 49.

SuggestedRemedy

Add PICS.

Proposed Response *Response Status* **O**

Cl **33** *SC* **79** *P* **208** *L* **2** # 42
Darshan, Yair Microsemi

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

(TDL for comment #237 from D2.0)
If PSE issues only single class event due to power limitations, it does not know what the PD physical advertised class is.
DLL also doesn't have this information by the TLVs.
If after some time PSE has a power budget > class 3, and the PD wants more using DLL, the PD can't require more power since DLL doesn't have the physical PD class information to know how much more power he can ask for.
As a result, we need to add to TLVs information, the PD physical class information.

SuggestedRemedy

See darshan_05_1116.pdf.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.3.8** *P* **215** *L* **6** # 266
Yseboodt, Lennart Philips

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

PICS ES1 "Conforms to IEC 60950-1:2001" has date in value, text does not.

SuggestedRemedy

Change to: "Conforms to IEC 60950-1"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.3.8** *P* **215** *L* **9** # 267
Yseboodt, Lennart Philips

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

PICS ES2 "In accordance with IEC 60950-1:2001" has date in value, text does not.

SuggestedRemedy

Change to: "In accordance with IEC 60950-1"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.3.9** *P* **215** *L* **26** # 268
Yseboodt, Lennart Philips

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

PICS PSEES1 "Limited Power Source in accordance with IEC 60950-1:2001" has date in value, text does not.

SuggestedRemedy

Change to: "Limited Power Source in accordance with IEC 60950-1"

Proposed Response *Response Status* **O**

Cl **79** *SC* **79.3** *P* **218** *L* **1** # 14
Anslow, Pete Ciena

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

Comment #185 against D2.0 was ACCEPT, but was not fully implemented:
Change the editing instruction to: "Change Table 79-1 (as modified by IEEE Std 802.3br-2016) as follows:" has not been done.

SuggestedRemedy

Change the editing instruction to: "Change Table 79-1 (as modified by IEEE Std 802.3br-2016) as follows:"

Proposed Response *Response Status* **O**

Cl **79** *SC* **79.3.2.1** *P* **219** *L* **14** # 282

Yseboodt, Lennart — Philips

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

Table 79-2, should be 79-3 according to the base standard. Review table numbers and correct.

SuggestedRemedy

Per comment.

Proposed Response *Response Status* **O**

Cl **79** *SC* **79.3.2.2** *P* **219** *L* **36** # 283

Yseboodt, Lennart — Philips

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

Subsections 79.3.2.2 and 79.3.2.3 refer to fields that do not occur in any of the tables.
The base standard also has this issue.
It seems something went wrong when 802.3at was adopted.

SuggestedRemedy

No clue. TFTD.

Proposed Response *Response Status* **O**

Cl **79** *SC* **79.3.2.6a** *P* **222** *L* **7** # 126

Schindler, Fred — Seen Simply, Cisco, T

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

Table 79-5a Function at bits 6:5 is "PSE power pairx" does not match the description in 79.3.2.6a.1 or the value used in 30.12.3.18e. The term "pairsx" is now prefered to "pairx".

SuggestedRemedy

Replace "pairx" in Table 79-5a with "pairsx". Replace "pair" in the title of 79.3.2.6a.1 with "pairsx". In the same section replace "pair field" with "pairx field".

Proposed Response *Response Status* **O**

Cl **79** *SC* **79.3.2.6b.1** *P* **223** *L* **5** # 127

Schindler, Fred — Seen Simply, Cisco, T

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

A new name needs to be used for the added "Power Type" field so that it is different than the legacy "Power Type" field 79.3.2.4.1.

SuggestedRemedy

Replace "Power type" in 79.3.2.6b.1 and Table 79-5b with "Power typex".

Proposed Response *Response Status* **O**

Cl **79** *SC* **79** *P* **223** *L* **6** # 84

Darshan, Yair — Microsemi

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

(TDL #248 d2.0)
The DLL dual-signature state machine needs to know if PD is single-signature or dual-signature.
The PSE knows this information through physical layer tests however it is not sure that the PD knows it by the existing TLV information or by other means.

SuggestedRemedy

See proposed remedy in darshan_12_1116.pdf

Proposed Response *Response Status* **O**

Cl **79** *SC* **79.3.2.6b.2** *P* **223** *L* **20** # 128

Schindler, Fred — Seen Simply, Cisco, T

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

Some text used in Table 79-5b uses "mode" rather than "Mode", which is accurate.

SuggestedRemedy

Replace the called out text with "Mode".

Proposed Response *Response Status* **O**

Cl **79** *SC* **79.3.2.6d** *P* **224** *L* **9** # 129

Schindler, Fred — Seen Simply, Cisco, T

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

A subject matter expert (Lennart?) needs to complete this register so that readers know how to process each field. For example what does the PSE or PD place in them?

SuggestedRemedy

Create a TDL to correct this concern.

Proposed Response *Response Status* **O**

Cl **33** *SC* **79.3.2.6d** *P* **224** *L* **12** # 41

Darshan, Yair — Microsemi

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

(TDL #232 Lennart Y.)
The text says:
"Using the Autoclass field to trigger a new Autoclass measurement allows a PD to change maximum power consumption."
In addition Table 79-5d tries to specify some "handshak" parameters.

I believe the definitions are incomplete and may cause issues.
a)It is not clear who is initiating the request for new Autoclass measurement?
b)What is the timing sequence?
c)When to raise power?
d)When to measure?
e)Where is the final Acknowledge?
f)The flow is missing.

SuggestedRemedy

This is part of the TDL for comment #232 D2.0 for Lennart..:)

Proposed Response *Response Status* **O**

Cl **33** *SC* **79.3.2.6d** *P* **224** *L* **34** # 269

Yseboodt, Lennart — Philips

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

"The request power down field shall be set as defined in Table 79-5f."
reference to Table is wrong.

SuggestedRemedy

Change to:
"The request power down field shall be set as defined in Table 79-5e."

Proposed Response *Response Status* **O**

Cl **79** *SC* **79.3.8.2** *P* **227** *L* **9** # 130

Schindler, Fred — Seen Simply, Cisco, T

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

A subject matter expert (Lennart?) needs to complete this register so that readers know how to process each field. For example what does the PSE or PD place in them? Is this a R/W or W?

SuggestedRemedy

Create a TDL to correct this concern.

Proposed Response *Response Status* **O**

Cl **79** *SC* **79.3.8.1** *P* **227** *L* **17** # 100

Jones, Chad — Cisco

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

valid values for the PD voltage measurement is 1 through 65000? This implies 65V at the PD

SuggestedRemedy

change 65000 to 57000

Proposed Response *Response Status* **O**

Cl **79** *SC* **79.3.8.2** *P* **228** *L* **42** # 101

Jones, Chad Cisco

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

valid values for the PSE voltage measurement is 1 through 65000? This implies 65V at the PSE PI

SuggestedRemedy

change 65000 to 57000

Proposed Response *Response Status* **O**

Cl **79** *SC* **79.5** *P* **229** *L* **1** # 36

Chabot, Craig UNH-IOL

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

To Satisfy comment number 127 on D2.0, the PICS were updated to reflect the changes in the text apparent in D2.0 when compared to Clause 79 of 802.3-2015. These changes can be seen in detail in Chabot_02_1116

SuggestedRemedy

None. The changes made are already reflected in D2.1

Proposed Response *Response Status* **O**

Cl **79** *SC* **79.4.2** *P* **231** *L* **7** # 123

Schindler, Fred Seen Simply, Cisco, T

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

All the added or amended Table 79-9 variables should have an active hyperlink to the associated clause 30 attributes.

SuggestedRemedy

Add functional hyperlinks.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33A.5** *P* **234** *L* **17** # 44

Darshan, Yair Microsemi

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

"For PD power above the values shown in Table 33.28 and up to PClass, stringent requirement will be needed to not exceed ICon-2P_unb by means of smaller constants ALFA and BETA in the equation RPair_PD_max = ALFA*RPair_PD_min+BETA."

It will help to the designer to have the equations and constants for class 6 and 8 for extended power as well.

To add to the spec the equations for extended power for class 6 and 8 and modify the above text accordingly.

SuggestedRemedy

Adopt darshan_04_1116.pdf if ready for the meeting. If not ready add to TDL.

Proposed Response *Response Status* **O**

Cl **79** *SC* **79.5.2.1** *P* **235** *L* **10** # 15

Anslow, Pete Ciena

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

As pointed out by comment #167 against D2.0, the change to 79.5.2.1 is not correct as the text in the base standard is already "inquiries".

SuggestedRemedy

Remove the editing instruction on line 5 and also remove the "e" in strikethrough font on line 10

Proposed Response *Response Status* **O**

Cl **33A** *SC* **33A** *P* **239** *L* **1** # 270

Yseboodt, Lennart Philips

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

I have a bunch of comments on Annex 33A sections 1 and 2.
It will be cleaner to replace Annex 33A rahter than convolute it with significant editing instructions.

SuggestedRemedy

Add "Replace Annex 33A" at the beginning of the Annex.

Proposed Response *Response Status* **O**

Cl **33A** *SC* **33A.1** *P* **239** *L* **22** # 271

Yseboodt, Lennart Philips

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

33A.1 makes use of two lettered lists that use consequtive lettering.
Since the lists enumerate two separate things this makes no sense.

SuggestedRemedy

Convert lettered list into dashed list.

Proposed Response *Response Status* **O**

Cl **33A** *SC* **33A.1** *P* **239** *L* **29** # 272

Yseboodt, Lennart Philips

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

"Zo_ps max = 0.3 ohm at frequencies up to 100 kHz at P port = P Type as defined in Table 33-11."

- Table 33-11 is bad reference
- PType ain't what it used to be (no longer equivalent to maximum power)
- PPort does not exist

SuggestedRemedy

Replace by:
"Zo_ps max = 0.3 ohm at frequencies up to 100 kHz at the highest Class output power the PSE supports, as defined in Table 33-13."

Proposed Response *Response Status* **O**

Cl **33A** *SC* **33A.1** *P* **239** *L* **33** # 273

Yseboodt, Lennart Philips

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

"If Zo_ps < Zo_ser and V Port is kept to V Port min and V Port max as defined in Table 33-11 during dynamic load changes from 10 Hz to 100 kHz, then the value of Zo_ps is not limited."

V_Port needs to be V_Port-2P

SuggestedRemedy

Change to V_Port-2P

Proposed Response *Response Status* **O**

Cl **33A** *SC* **33A.1** *P* **239** *L* **36** # 274

Yseboodt, Lennart Philips

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

"Compliance to the above requirements should be made by measuring the port output impedance from 10 Hz to 100 kHz with a load of P Type as defined in Table 33-11 at short cable length, or by presenting simulation results."

This is an INFORMATIVE annex, thus the word requirements and compliance is inappropriate. Also, PType is no longer correct.

SuggestedRemedy

"Verification of these guidelines can be made by measuring the port output impedance from 10 Hz to 100 kHz with the maximum load per the PSEs assigned Class, as defined in Table 33-13 at short cable length, or by performing simulations."

Proposed Response *Response Status* **O**

Cl **33A** *SC* **33A.1** *P* **240** *L* **24** # 275

Yseboodt, Lennart Philips

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

"See Figure 33A-2 for the test setup and Figure 33A-3 for the test requirements."

Where do I begin ?

These figures have a number of issues.
The biggest one is that they are not used, nor described.
There is no text at all that tells what to do with it.

33A-3, describes "test requirements". But is just a figure.
With an X axis in KHz... but no values anywhere.

SuggestedRemedy

- Remove quoted text and Figures 33A-2 and 33A-3.

Proposed Response *Response Status* **O**

Cl **33A** *SC* **33A.1** *P* **241** *L* **1** # 276

Yseboodt, Lennart Philips

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

Figure 33A-3 uses no less than 3 different font sizes, and fonts in one Figure.
It is also unclear if the Z_ser @ frequency=0 belongs to that bottom line, or belongs to the range at the bottom.

SuggestedRemedy

I will venture a guess here and predict this is a Yair Figure from the .af days.
TFTD - what does this Figure mean & how can we draw it better ?
In any case, fix font size/type.

Proposed Response *Response Status* **O**

Cl **33A** *SC* **33A.2** *P* **241** *L* **28** # 277

Yseboodt, Lennart Philips

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

In 33A.2 there are two lettered lists that have no relation.

SuggestedRemedy

Convert to dashed list.

Proposed Response *Response Status* **O**

Cl **33A** *SC* **33A.2** *P* **241** *L* **34** # 278

Yseboodt, Lennart Philips

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

"... including the PD EMI output filter impedance fed by the cable (MDI) output impedance, which ..."

- We usually refer to the channel, not the cable
- The MDI is not the cable.
The MDI is defined as "The mechanical and electrical or optical interface between the transmission medium and the MAU... "

SuggestedRemedy

"... including the PD EMI output filter impedance fed by the channel output impedance, which ..."

Make a similar correction on line 37.

Proposed Response *Response Status* **O**

Cl **33A** *SC* **33A.2** *P* **241** *L* **41** # 279

Yseboodt, Lennart Philips

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

"Because of this, measuring the PD input impedance is a complicated task and the following guidelines should be followed by the PD vendor:"

This is not standards language.

SuggestedRemedy

"The following guidelines are recommended when measuring the PD input impedance:"

Proposed Response *Response Status* **O**

Cl **33A** *SC* **33A.2** *P* **241** *L* **43** # 280

Yseboodt, Lennart Philips

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

Page 241, lines 41-54 make use of P_Port.

This parameter does not exist.

SuggestedRemedy

Replace P_Port by P_Port_PD in the referenced part.

Proposed Response *Response Status* **O**

Cl **33** *SC* **A.4** *P* **242** *L* **42** # 131

Shariff, Masood CommScope

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

The requirement for channel pair-to-pair DC resistance unbalance is listed on lines 22-23 as shown below:

"Operation using 4-pair requires the specification of resistance unbalance between each two pairs of the channel,not greater than 100 mÙ or resistance unbalance of 7% whichever is a greater unbalance."

This requirement applies to all channels with 4 connections up to 100 m.

The Note on lines 42-43 states:

"NOTE—7% is the worst case pair-to-pair resistance unbalance at 100 mOhms of channel pair-to-pair resistance difference.
At 100 meter channel length, the cable and connectors ensures 5.5% maximum channel pair-to-pair resistance unbalance."

This is confusing and conflicting with the requirement by stating 5.5%. The requirements are clear and the note is not needed anymore (OBE).

SuggestedRemedy

Delete the Note.

Proposed Response *Response Status* **O**

Cl **33B** *SC* **33B** *P* **245** *L* **1** # 286

Yseboodt, Lennart Philips

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

Annex 33B, p245, line 18 says:

"Current unbalance requirements (R PSE_min , R PSE_max and I Con-2P-unb) of a PSE shall be met with R load_max and R load_min as specified by Table 33B-1."

This is a KEY requirement for PSEs to meet. It is the essence of 4-pair unbalance, and the counterpart of the PD requirement in 33.3.8.10.

This requirement should not be lurking in an Annex, where it may get overlooked, this needs to be in the main text.

SuggestedRemedy

Adopt yseboodt_05_1116_annex33b.pdf.

This baseline will endeavor to:
- Move the requirements into 33.2.8.4.1
- 'Unshall' some text in 33B that should not be a requirement, but informative
- Make Annex 33B an informative Annex if possible

Proposed Response *Response Status* **O**

Cl **33** *SC* **33B.1** *P* **245** *L* **23** # 70

Darshan, Yair Microsemi

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

The text "A compliant unbalanced load, Rload_min and Rload_max, consists of the channel (cables and connectors), the PD effective resistances, and the PSE PI effective resistance."
Is not fully acurate after removing part of the text in D2.1.

SuggestedRemedy

Change from:
"A compliant unbalanced load, Rload_min and Rload_max, consists of the channel (cables and connectors), the PD effective resistances, and the PSE PI effective resistance."
To:
"A compliant unbalanced load, Rload_min and Rload_max, consists of the channel (cables and connectors), the PD PI effective resistances, and a portion of PSE PI effective resistance."

Proposed Response *Response Status* **O**

Cl **33** *SC* **Annex 33C** *P* **251** *L* **14** # 40

Darshan, Yair — Microsemi

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

(TDL #231 Lukacs, Miklos)
Annex 33c objective is to supply informative data regarding the timing relationships between detection and connection check as function of CC_DET_SEQ variable options.
After reviewing it, it seems to supply also information regarding if classification must be done in parallel when dual-signature PD is detected and Class_4PID_mult_events_sec is TRUE which is not necessarily correct.
Staggered classification can be done regardless if it is single or dual signature PD and staggered classification can be done regardless if it is Class_4PID_mult_events_sec is TRUE or FALSE.
In addition, in all drawings, PWRUP starts at the same time while in dual-signature or even single signature, PWR_UP can be done in different times.

SuggestedRemedy

Update drawing to address the following points:
a)In dual-signature classification can be done in parallel or in staggered way. See example in figure 33C-2, 33C-5 that classification is in parallel and cab ne also staggered. Or add note saying "The drawing show one option to classification and POWER_ON timing. Staggered classification and POWER_ON can be done."
b)Scan all drawing in Annex 33C and repeat the fix if required.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33C.1** *P* **251** *L* **14** # 106

Lukacs, Miklos — Silicon Labs

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

The text and figures suggest at multiple places that based on the value of State Machine variables classification must be done in parallel on both alternatives when dual-signature PD is detected.

SuggestedRemedy

Classification can optionally be done staggered also for dual signature PDs.
See presentation "Remedies for comments against Annex 33C"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33C.1** *P* **251** *L* **14** # 107

Lukacs, Miklos — Silicon Labs

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

The figures suggests at multiple places that Power On must be done in parallel on both alternatives.

SuggestedRemedy

Staggered Power On can be implemented.
See presentation "Remedies for comments against Annex 33C"

Proposed Response *Response Status* **O**

Cl **33C** *SC* **33C.2** *P* **255** *L* **14** # 281

Yseboodt, Lennart — Philips

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

Editor made a mistake adopting comment D2.0 #203.

SuggestedRemedy

Remove T_ME1 arrow in Figure 33C-12 and implement D2.0 #203 (which adds TCLE1).

Proposed Response *Response Status* **O**

Cl **33** *SC* **33C.2** *P* **255** *L* **20** # 38

Darshan, Yair — Microsemi

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

This comment was not implemented in D2.0 and resubmitted again.
Figure 33C-12: Missing TCLE1 label and arrow as done for Figure 33C-13.

SuggestedRemedy

Add TCLE1 lable and arrow to Figure 33C-12.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33C.2** *P* **255** *L* **20** # 105

Lukacs, Miklos Silicon Labs

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

Figure 33C-12: Missing TCLE1 label and arrow as done for Figure 33C-13

SuggestedRemedy

See presentation "Remedies for comments against Annex 33C"

Proposed Response *Response Status* **O**

Cl **33C** *SC* **33C** *P* **256** *L* **53** # 97

Jones, Chad Cisco

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

Figure 33C-15 was generated from http://www.ieee802.org/3/bt/public/may16/yseboodt_08_0516_autoclass4.pdf but did not include the explanation of the various segments labeled 1-8.
We should add that, or remove the numbers.

SuggestedRemedy

use http://www.ieee802.org/3/bt/public/may16/yseboodt_08_0516_autoclass4.pdf to get the descriptions for periods 1 thru 8 and add to the drawing.

Proposed Response *Response Status* **O**