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

Stover, David Linear Technology

*Comment Type* **TR** *Comment Status* **X** *Pres: Paul1*

TDL D2.0 #513 - System Unbalance Requirements

*SuggestedRemedy*

See paul_01_1116.pdf

*Proposed Response* *Response Status* **W**

WFP

TFTD

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

Schindler, Fred Seen Simply, Cisco, T

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

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* **W**

TFTD

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

Jones, Chad Cisco

*Comment Type* **T** *Comment Status* **X** *Pres: Jones1*

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* **W**

WFP

TFTD

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

Yseboodt, Lennart — Philips

*Comment Type* **TR** *Comment Status* **D** *Definitions*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Implement suggest remedy but add the references to IEEE 802.3, Clause 33 to each definition.

TFTD CJ:
new definition for Type 1 PD leaves overlap with the definition for Type 3 PD that could cause confusion. Though I'm struggling with what to add to differentiate the two.

TFTD HS:
Used to say "only". Now is says "up to". Best to stay with "not" style...
- Type 1 PSE: A PSE that supports no more than Class 3 power levels and provides power over 2-pair.

TFTD CB:
What really distinguishes Type1 and Type2 vs. Type3 is that they miss to support short MPS. That should be included in the definition of Type 1 and Type 2 PSEs and PDs

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

Stover, David — Linear Technology

*Comment Type* **T** *Comment Status* **D** *Definitions*

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* **W**

PROPOSED REJECT.

Class 1 to 3 Type 3 PDs are not required to support DLL. (We had this discussion previously and decided to leave it out of the definition).

TFTD HS:
Stover got a comment rejected…

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

Darshan, Yair — Microsemi

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

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* **W**

TFTD

I don't know what is missing based on this comment. Please be more specific if something is missing. I will mark it as TFTD, please be ready with which TLVs are missing.

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

Schindler, Fred — Seen Simply, Cisco, T

*Comment Type* **TR** *Comment Status* **X** *Pres: Schindler1*

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* **W**

WFP

TFTD

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

Darshan, Yair — Microsemi

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

"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* **W**

TFTD

Do we have a resolution?

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

Darshan, Yair — Microsemi

*Comment Type* **T** *Comment Status* **X** *Pres: Darshan15*

(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* **W**

WFP

TFTD

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

Anslow, Pete — Ciena

*Comment Type* **ER** *Comment Status* **D** *Editorial*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by 172

TFTD LY:
This comment is on different sections and should not be OBE.
Change to ACCEPT

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

Anslow, Pete — Ciena

*Comment Type* **TR** *Comment Status* **X** *Pres: Jones1*

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* **W**

TFTD

WFP

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

Darshan, Yair — Microsemi

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

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* **W**

TFTD

Should this be a new section somewhere? Should this go in Section 33.1.4?

Better text:

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 be lower than Icable resulting with a total current of 2xIcable over a single 4-pair cable."

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

Yseboodt, Lennart Philips

*Comment Type* **TR** *Comment Status* **D** *Cabling*

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* **W**

PROPOSED ACCEPT.

TFTD CB:
Rch is the maximum channel DC pairset loop resistance

TFTD FS:
The comment is can be improved and is incomplete. This text may be better,
"Rch is the maximum DC pairset loop resistance. The supported value of Rch depends on the PSE Type and is defined in Table 33-1."
Scrap duplicate, less complete, definition on page 54 line 14.

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

Yseboodt, Lennart Philips

*Comment Type* **TR** *Comment Status* **D** *Editorial*

"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* **W**

PROPOSED ACCEPT.

TFTD HS:
Removing "DC loop" from the definition makes the definition incorrect and incomplete. The reader has already been warned that our definition deviates from other's standards. At a minimum keep "DC" and lose “loop”.
Furthermore do not change the Rchan-2P definition as it is unique.

TFTD YD:
The problem is not clear. The wording that we currently have contain more information. So I'd like to keep it unchange.

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

Jones, Chad Cisco

*Comment Type* **ER** *Comment Status* **D** *Editorial*

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 removed 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 doesn'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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add to 33.1.4.

TFTD LY:
Indeed Iport should be in 33.1.4, suggest also to add Iport-2P
We need appropriate definitions. See yseboodt_06__1116iport.pdf

TFTD HS:
Remedy is incomplete. Please share the definition to be inserted...
It could be the variable definition for T1/2 PSE SM (terse and requires a reference jump for almost no reason):
IPort-2P
Output current (see 33.2.8.6).

or the above referenced section 33.2.8.6, which is not broad enough for 2P and 4P:
If IPort-2P, the current supplied on a pairset by the PSE to the PI,

or 33.2.8.4:
…IPort is the total current on both pairs with the same polarity and is defined in Equation (33–7)…

or a combination:
TBD

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

Shariff, Masood CommScope

*Comment Type* **TR** *Comment Status* **D** *Cabling*

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* **W**

PROPOSED ACCEPT.

TFTD CB:
change to: maximum ambient temperature surrounding the cable

TFTD FS:
These are changes to legacy text. The term "operating" was used to call the ambient "operating" temperature permitted by the cable provider. The original text was proposed by Chris DiMinico during .3at creation. This text was use to permit system installers to select cables based on allowed operating ratings and currents used in the cable.

The .3bt text wants to achieve two things:
1. Permit a 5C reduction when half the conductors are energized.
2. Permit a cable manufacturer to have a higher operating temperature that benefits the system user.

Operating temperature – temperature rise = ambient temperature
I want the text we adopt to make it clear that a higher operating temperature allowance, having half the conductors energized, or both benefits the system user.

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

Yseboodt, Lennart Philips

*Comment Type* **ER** *Comment Status* **D** *PSE SD*

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* **W**

PROPOSED ACCEPT.

TFTD YD:
Error in the remedy. It should be Figure 33-13.

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

Schindler, Fred Seen Simply, Cisco, T

*Comment Type* **TR** *Comment Status* **D** *PSE SD*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This needs to be filed as a maintenance request for Type 1 and Type 2. However, I would recommend updating the state diagram to make it optional since that was the intent and you won't make any PDs noncompliant by doing that.

For Type 3 and 4, TFTD

some thoughts:
add new variable:
option_tdbo_omit: A variable indicating if the PSE omits the Tdbo back off timer if it detects an open circuit on when performing detection only on alternative B.
True: The PSE omits the Tdbo back off timer.
False: The PSE does not omit the the Tdbo back off timer.

Update state diagram to use new variable by change transition from DETECT_EVAL to BACKOFF to:
(pse_alternative=b) * ((sig_pri=invalid) + (sig_pri=open_ciruit)*!option_tdbo_omit)

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

Darshan, Yair — Microsemi

*Comment Type* **TR** *Comment Status* **X** *PSE SD*

The pd_autoclass term is never read 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* **W**

TFTD

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

Yseboodt, Lennart — Philips

*Comment Type* **ER** *Comment Status* **D** *PSE SD*

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* **W**

PROPOSED ACCEPT.

TFTD YD:
Error in the remedy. It should be Figure 33-15, Figure 33-16 and Figure 33-17.

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

Stover, David — Linear Technology

*Comment Type* **T** *Comment Status* **D** *PSE SD*

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* **W**

PROPOSED ACCEPT.

TFTD CB:
cannot remove the assignment "iclass_lim_det <= FALSE" from global IDLE state, since it is a condition to get into IDLE. Removing the assignment the SM is stuck in IDLE.

---

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

Stover, David — Linear Technology

*Comment Type* **ER** *Comment Status* **D** *PSE SD*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by 178

TFTD

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

Yseboodt, Lennart — Philips

*Comment Type* **TR** *Comment Status* **X** *Pres: Yseboodt1*

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* **W**

WFP

TFTD

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

Beia, Christian STMicroelectronics

*Comment Type* **E** *Comment Status* **D** *PSE SD*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD where these sentences should go.

My suggestion: Page 110, line 15. (although Type 1 is out of place in multi-event…)

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

Stover, David Linear Technology

*Comment Type* **TR** *Comment Status* **X** *Pres: Stover1*

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

*SuggestedRemedy*

See stover_01_1116.pdf

*Proposed Response* *Response Status* **W**

WFP

TFTD

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

Stover, David Linear Technology

*Comment Type* **TR** *Comment Status* **X** *PSE SD*

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* **W**

TFTD should it be IDLE or A???

This comment will be used to OBE all related comments.

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

Beia, Christian STMicroelectronics

*Comment Type* **ER** *Comment Status* **D** *PSE SD*

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* **W**

PROPOSED ACCEPT.

TFTD

That arc was not there, but was there for the SEC alternative…was there a reason for this?

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

Darshan, Yair Microsemi

*Comment Type* **TR** *Comment Status* **X** *PSE SD*

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* **W**

TFTD

This path is only used by some sequences. For example, you can go from ENTRY_PRI to START_DETECT_PRI without this condition.

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

Stover, David — Linear Technology

*Comment Type* **T** *Comment Status* **D** *PSE SD*

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* **W**

PROPOSED ACCEPT.

TFTD CB:
Removing assignment of "false" to iclass_lim_det_pri and _sec in ENTRY_PRI and ENTRY_SEC the SM is stuck in IDLE_PRI or IDLE_SEC.

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

Darshan, Yair — Microsemi

*Comment Type* **TR** *Comment Status* **X** *PSE SD*

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* **W**

TFTD

See 64

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

Darshan, Yair — Microsemi

*Comment Type* **TR** *Comment Status* **D** *PSE SD*

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* **W**

PROPOSED ACCEPT.

TFTD HS:
The PRI construction and the suggested SEC construction makes class based 4PID mandatory (top level AND term).
The parentheses in _PRI makes 4PID option B impossible
“b) The PSE detects a valid detection signature on the unpowered pairset when power has been applied to a pairset.”
Also the detection check is not known to occur while the other alt is powered so it is not known if 4PID is valid via method B as the SM is built.

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

Yseboodt, Lennart Philips

*Comment Type* **TR** *Comment Status* **D** *PSE SD*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See 66

TFTD HS:
The PRI construction and the suggested SEC construction makes class based 4PID mandatory (top level AND term).
The parentheses in _PRI makes 4PID option B impossible
“b) The PSE detects a valid detection signature on the unpowered pairset when power has been applied to a pairset.”
Also the detection check is not known to occur while the other alt is powered so it is not known if 4PID is valid via method B as the SM is built.

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

Darshan, Yair Microsemi

*Comment Type* **TR** *Comment Status* **X** *Pres: Darshan8*

(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* **W**

WFP

TFTD

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

Picard, Jean Texas Instruments

*Comment Type* **ER** *Comment Status* **D** *Editorial*

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* **W**

PROPOSED ACCEPT.

TFTD CJ:
"Make it AIP and add CLASS_EV3_SEC to MARK_EV3_SEC exit condition (it overlaps another transition line) and the C1 on pg 97, C2 on 98, and C3 on 99 to the list to clean up.

Also, whats going on with the kerning in some of these transitions? For example see temp_var_pri on pg 98, ln 21. very compressed."

*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* **W**

TFTD

See 187

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

Yseboodt, Lennart Philips

*Comment Type* **T** *Comment Status* **X** *PSE SD*

"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* **W**

TFTD

I don't understand how the SD is stuck. Alt_pwrd_pri says you are/will apply power while !pwr_app_pri says you are not yet at full operating current (POWER_ON). The only way to get stuck is if you go from IDLE to POWER ON without going through inrush, right?

See 188

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

Beia, Christian STMicroelectronics

*Comment Type* **T** *Comment Status* **D** *PSE Detection*

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* **W**

PROPOSED REJECT.

33.2.8.1 explains when the transition is allowed or not. That is what this sentence is referring to (not the other operating conditions listed in 33.2.8.1).

TFTD

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

Yseboodt, Lennart Philips

*Comment Type* **T** *Comment Status* **D** *PSE Detection*

"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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

Can't we just put "0" into the min column and leave the text as is. I don't like the suggested text.

Or how about:
"The PSE shall not be damaged by up to 5 mA backdriven current for any voltage less than or equal to V oc as specified in Table 33-10."

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

Darshan, Yair Microsemi

*Comment Type* **TR** *Comment Status* **X** *Pres: Darshan1*

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* **W**

WFP

TFTD

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

Darshan, Yair Microsemi

*Comment Type* **TR** *Comment Status* **X** *PSE SD*

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* **W**

TFTD

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

Yseboodt, Lennart Philips

*Comment Type* **E** *Comment Status* **D** *Editorial*

"... 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* **W**

PROPOSED ACCEPT.

Thank you Lennart. I will offer a beer to whoever finds and fixes the most missing serial commas every meeting.

TFTD

TFTD CJ:
so you're pulling this one out just to announce that you are buying Lennart a beer this meeting? You were buying him at least one anyway… ;-)

Response DNA: Pulling it out to announce the competition. Just because Lennart will probably always win it doesn't mean I love you less…

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

Schindler, Fred — Seen Simply, Cisco, T

*Comment Type* **TR** *Comment Status* **D** *PSE Class*

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* **W**

PROPOSED ACCEPT.

TFTD LY:
OK technically, but too much stuff in one sentence.
Keep sentence as is, add new sentence after: “DLL classification may alter the assigned Class, see Table 33-25”

TFTD CJ:
reject. This is the physical layer introductory text. Physical layer happens before DDL can. Don't confuse the reader. As Dave says, they need to read the whole doc. Just two pages later, while still in section 33.2.7, they get that explanation.

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

Yseboodt, Lennart — Philips

*Comment Type* **TR** *Comment Status* **D** *PSE Class*

"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* **W**

PROPOSED ACCEPT.

TFTD HS:
dual-signature should be dual-signature PD

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

Schindler, Fred — Seen Simply, Cisco, T

*Comment Type* **TR** *Comment Status* **X** *Pres: Yseboodt4*

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* **W**

WFP

TFTD

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

Jones, Chad — Cisco

*Comment Type* **TR** *Comment Status* **X** *PSE Class*

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* **W**

TFTD

Is there a difference between class 0 and class 3?

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

Yseboodt, Lennart — Philips

*Comment Type* **TR** *Comment Status* **X** *Pres: Yseboodt3*

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* **W**

WFP

TFTD

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

Jones, Chad — Cisco

*Comment Type* **ER** *Comment Status* **X** *PSE Class*

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* **W**

TFTD

Should this be a shall? Is it covered somewhere else?

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

Schindler, Fred — Seen Simply, Cisco, T

*Comment Type* **TR** *Comment Status* **X** *PSE Class*

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* **W**

TFTD

TFTD CJ:
I think Fred is asking that a PD be allowed to negotiate for more power if the result of MUID was something less than the PD was PREPARED to present. A PSE that is power budget constrained may stop classification at any point in the process to assure it won't oversubscribe the power budget. Therefore we need a mechanism to allow a PSE/PD combo to negotitate to a higher Class but only if the PD was able to present the proper physical layer class - though the PSE won't be able to confirm this. Otherwise, you'd have to reboot the PD and that isn't acceptable. this is going to take some real crafting of text.

Response DNA:
No it doesn't. The PSE simply has to trust the PD. The PD has a requirement not to ask for more than its advertised class. Done.

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

Yseboodt, Lennart — Philips

*Comment Type* **TR** *Comment Status* **D** *PSE Class*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD, there are a lot of comments on this topic.

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

Darshan, Yair — Microsemi

*Comment Type* **TR** *Comment Status* **X** *Pres: Darshan2*

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* **W**

WFP

TFTD

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

Yseboodt, Lennart Philips

*Comment Type* **TR** *Comment Status* **D** *PSE Class*

"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* **W**

PROPOSED ACCEPT.

TFTD HS:
This does not do what we want. It allows infinite events between, say, a detect and power on.

Change (4x)
between a class reset and the application of power to the PD.

To
Unless a class reset event clears the class and mark event counts.

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

Schindler, Fred Seen Simply, Cisco, T

*Comment Type* **TR** *Comment Status* **X** *PSE Class*

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* **W**

TFTD

I believe Yair is working on this. This solution provides an implementation specific solution which is not necessary.

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

Jones, Chad Cisco

*Comment Type* **ER** *Comment Status* **D** *PSE Class*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

I am not crazy about adding extra sentences to explain the reasoning. It begins to sound like a tutorial.

How about we change the actual sentence to something like this:

"Type 3 and Type 4 PSEs that require more class pulses for mutual identification than their power available allows may issue a class reset event after performing mutual identification."

TFTD

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

Yseboodt, Lennart Philips

*Comment Type* **T** *Comment Status* **D** *PSE Class*

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* **W**

PROPOSED REJECT.

Huh? Why are we putting this in the standard?

TFTD

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

Yseboodt, Lennart Philips

*Comment Type* **TR** *Comment Status* **D** *PSE Class*

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* **W**

PROPOSED REJECT.

Looking at the 2012 standard (AT), the Tpdc is only allowed for Type 1. If a Type 2 PSE does single-event, it still has to use TCLE1.

TFTD

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

Beia, Christian STMicroelectronics

*Comment Type* **TR** *Comment Status* **D** *PSE Class*

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* **W**

PROPOSED REJECT.

See 208

TFTD

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

Beia, Christian STMicroelectronics

*Comment Type* **TR** *Comment Status* **D** *Pres: Darshan8*

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* **W**

PROPOSED ACCEPT.

WFP

TFTD YD:
If I do 3 class events and then class reset, the 1st class event doesn't have to be long class. Only the new first class event after reset have to be long. See darahan_08_1116.pdf.

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

Jones, Chad Cisco

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

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* **W**

TFTD

See 210 (probably OBE)

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

Yseboodt, Lennart Philips

*Comment Type* **TR** *Comment Status* **D** *Autoclass*

"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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Lennart, not sure if this is what you were going for or if you meant to infer that if pd_autoclass is true then the autoclass_enabled variable was obvsiouly true…

TFTD

Replace quoted text by:
"A PSE shall measure P_Autoclass when it reaches the POWER_ON state if the variable autoclass_enabled has the value 'True', indicating that the PSE supports Autoclass, and the do_autoclassification function returned the variable pd_autoclass with a value of 'True', indicating the PD has requested Autoclass during Physical Layer classification.

Update PICS PSE80

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

Yseboodt, Lennart Philips

*Comment Type* **ER** *Comment Status* **D** *Editorial*

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* **W**

PROPOSED ACCEPT.

TFTD HS:
This is better as a note than a new section. Also it should say "power on" instead of "POWER_ON".

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

Darshan, Yair Microsemi

*Comment Type* **T** *Comment Status* **X** *Pres: Darshan7*

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* **W**

WFP

TFTD

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

Yseboodt, Lennart Philips

*Comment Type* **ER** *Comment Status* **D** *Editorial*

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* **W**

PROPOSED ACCEPT.

TFTD CB:
I prefer “as function of the assigned Class”

TFTD YD:
"I prefer to keep the wording as it has today to have controll on each item. Item 11 ILIM-2P is not per the assigend class!.
Regarding Item 6 and 7 Iinrush and Iinrush-2P I have doubdts and I would like to discuss it."

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

Darshan, Yair Microsemi

*Comment Type* **TR** *Comment Status* **D** *PSE Inrush*

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* **W**

PROPOSED REJECT.

This would require lower power PSEs to support the inrush demands of a high power PD.

TFTD

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

Darshan, Yair Microsemi

*Comment Type* **TR** *Comment Status* **D** *PSE Inrush*

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* **W**

PROPOSED REJECT.

TFTD

See 80.

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

Yseboodt, Lennart Philips

*Comment Type* **TR** *Comment Status* **D** *PSE Power*

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* **W**

PROPOSED ACCEPT.

TFTD

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

Yseboodt, Lennart Philips

*Comment Type* **E** *Comment Status* **D** *Editorial*

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* **W**

PROPOSED ACCEPT.

TFTD CB:
A Type 1 or Type 2 PSE will use Ihold-2P as described in the first line of item 18 for any PD. So the description for this item should be “Any PD”

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

Stover, David Linear Technology

*Comment Type* **T** *Comment Status* **D** *Pres: Darshan1*

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* **W**

PROPOSED ACCEPT.

TFTD LY:
I bet there is a darshan_xx this is OBE to.

TFTD YD:
There is darshan_01_1116.pdf that coveres this subject.

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

Jones, Chad Cisco

*Comment Type* **E** *Comment Status* **D** *Editorial*

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* **Z**

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

Here is the first result from google:
Colons. 1. Do not use a colon in a complete sentence after phrases such as "such as," "including," and "for example." Because phrases like these already indicate to the reader that a list of examples will follow, there is no need to introduce them with a colon, which would merely be redundant.

Also, you added a comma between a list of two things (I know I love serial commas, but you need 3 things in a list).

TFTD

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

Wendt, Matthias Philips

*Comment Type* **TR** *Comment Status* **X** *PSE Unbalance*

"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* **W**

This section needs some work. This sentence says that the minimum current on a pairset is I Peak-2P-unb, but equation 33-14 says that it is actually the minimum of that value and I Peak - I Port-2p-other.

Why is Equation 33-14 introduced before equation 33-10?

Shouldn't this section introduce equation 33-14 first (make it equation 33-10) and then everything that follows is an explanation of those values?

I may try to rewrite this section before the meeting. Please talk to me (Dave A.) before working on it.

TFTD

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

Yseboodt, Lennart Philips

*Comment Type* **TR** *Comment Status* **X** *PSE Unbalance*

"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* **W**

TFTD

See 217

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

Darshan, Yair Microsemi

*Comment Type* **TR** *Comment Status* **D** *Pres: Darshan14*

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* **W**

PROPOSED ACCEPT.

TFTD LY:
Comment refers to “approved” presentation, darshan_16_0916. That presentation was not adopted.
Let’s look at darshan_14_1116.

TFTD CB:
it is not clear which remedy has been implemented

TFTD HS:
WFP.

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

Darshan, Yair Microsemi

*Comment Type* **TR** *Comment Status* **X** *Pres: Darshan7*

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* **W**

WFP

TFTD

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

Darshan, Yair Microsemi

*Comment Type* **TR** *Comment Status* **X** *Pres: Darshan2*

(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* **W**

WFP

TFTD

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

Yseboodt, Lennart Philips

*Comment Type* **TR** *Comment Status* **D** *PSE Power*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Implement suggested remedy with following change:

Parameter: "Output current - at short circuit condition, when operating in 4-pair mode and connected to a single-signature PD, as function of the Class assigned to the PD"

TFTD YD:
"Due to the fact that ILIM-2P is just a data point in Figure 33-28 and Figure 33-29 and has no use for protection (we have to have ILIM-2P per per set), it is better to remove ILIM_min data point from Figure 33-28 and Figure 33-29remove Equation 33-17. "

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

Darshan, Yair Microsemi

*Comment Type* **E** *Comment Status* **D** *Editorial*

"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* **W**

PROPOSED ACCEPT.

TFTD LY:
Should be OBE to #220
OBE to #220

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

Darshan, Yair Microsemi

*Comment Type* **TR** *Comment Status* **X** *Pres: Darshan1*

(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* **W**

WFP

TFTD

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

Yseboodt, Lennart Philips

*Comment Type* **T** *Comment Status* **D** *Pres: Darshan1*

"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* **W**

PROPOSED ACCEPT.

TFTD YD:
There is darshan_01_1116.pdf that coveres this subject.

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

Stewart, Heath Linear Technology

*Comment Type* **TR** *Comment Status* **X** *PD Types*

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* **W**

I understand both the comment and why the original text is the way it is…Thus I am not sure what to do with this one.

TFTD

Full original text:

The PD shall be implemented to be insensitive to the polarity of the power supply. 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. All other PDs may require being supplied over Mode A and Mode B simultaneously to operate at their nominal power level.

NOTE—PDs that implement only Mode A or Mode B are specifically not allowed by this standard. PDs that are sensitive to polarity are specifically not allowed by this standard.

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

Jones, Chad Cisco

*Comment Type* **T** *Comment Status* **X** *PD Power*

"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* **W**

TFTD

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

Stewart, Heath — Linear Technology

*Comment Type* **TR** *Comment Status* **D**

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to:
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.

TFTD CB:
the remedy does not help to clarify that Type 1 and Type 2 PDs cannot be constructed as dual-signature PDs. Table 33-22 doesn't say that. We should add this info in Table 33-22 maybe?

Response DNA: Type 1 and 2 can be constructed as dual-signature (I can build a compliant DS Type 1 PD). It is just never addressed by the standard and that is how we are leaving it.

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

Jones, Chad — Cisco

*Comment Type* **ER** *Comment Status* **D** *PD Power*

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* **W**

PROPOSED REJECT.

If we adopt this methodology we will be left with a document that is completely swamped out by cross references. Readers need to read the entire document! Making it easy for them to cherry pick certain information without understanding the whole spec will only lead to more problems.

TFTD

TFTD CJ:
I only added cross references where I thought it was helpful to the poor reader of our doc. In actuallity I am saying this section should be restructured to tell a better story from beginning to end but that is too much work. So the minimum effort is to give a pointer.

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

Stewart, Heath — Linear Technology

*Comment Type* **E** *Comment Status* **D** *Maintenance*

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* **W**

PROPOSED REJECT.

This is the Type 1, 2 State Diagram. We are not touching it unless comments against it are filed as maintenance requests.

TFTD LY:
An MR is required to make technical changes. The comment asks for an change in the name of the state, which is non-technical. The argumentation is sound, this is the only state name in all of 802.3 with a “-” in it.
Accept the comment.

Response DNA:
Fine with me, I was only trying to save our friendly neighborhood editor some work.

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

Beia, Christian — STMicroelectronics

*Comment Type* **T** *Comment Status* **D** *PD Class*

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* **W**

PROPOSED REJECT.

Tclass_PD only has a max value, so it is not a range.

TFTD CB:
I understand TClass_PD is not a range but I would prefer using TClass_PD max anyway, since it is clearer.

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

Stewart, Heath — Linear Technology

*Comment Type* **T** *Comment Status* **D** *PD SD*

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* **W**

PROPOSED ACCEPT.

TFTD CJ:
remedy instructs to globally change 'to the link' to 'to the PI'. At a minimum I want that with editorial license. I haven't searched the whole doc for 'to the link' to make sure it is appropriate in each instance to change to 'to the PI'.

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

Stewart, Heath — Linear Technology

*Comment Type* **E** *Comment Status* **X** *Pres: Stewart1*

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* **W**

WFP

TFTD

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

Stewart, Heath — Linear Technology

*Comment Type* **T** *Comment Status* **D** *PD SD*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to:
tinrushpd_timer
A timer used to determine when the PD exits INRUSH and meets the requirements of MDI_POWER1; see TInrush_PD in Table 33–31.

TFTD the following:
MDI_POWER1 has the requirement of drawing class 3 power or less (see SD). This directly contradicts inrush currents above 400mA.

TFTD YD:
This comment is not clear to me.

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

Schindler, Fred — Seen Simply, Cisco, T

*Comment Type* **TR** *Comment Status* **X** *PSE SD*

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* **W**

Huh?

I don't understand why this comment is associated with page 141, line 28, but the fix is on page 150. I also don't understand what the suggested remedy means.

TFTD

TFTD FS:
PROBLEM
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.

Variable pse_power_level indicates the PSE power supplied to the PD. Table 33-25 provides the PD DLL maximum power value that the PD may operate at. To permit the PD state diagram to increase PD demand, pse_power_level needs to change because pd_req_class does not change.

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

ADDITIONAL CONCERN
pd_max_power □ min(3, pd_req_class)

Is min() defined (Lennart says it is but I could not find it in .3)? I guess it means the smaller of the inputs so pd_max_power can never go higher than 3! What is the point of min(3, x)? If a PD wants class 2 it should get class 2. The min value needs to be guaranteed on the PSE side of the system so that indicators can work on an underpowered PD. Do you agree with these concerns? If so we need to created a TDL item.

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

Beia, Christian STMicroelectronics

*Comment Type* **E** *Comment Status* **D** *Pres: Stewart1*

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* **W**

PROPOSED ACCEPT.

TFTD LY:
Schindler_02_0916.pdf made that change, but this wasn't implemented in the Visio, but directly into the new state diagram.
Do not implement suggested remedy.

TFTD CJ:
caught this too but confirmed with Lennart that pse_power_level =3 / >3 are the right conditions based on a comment against D2.0. these labels were in Fred's baseline.
REJECT the comment

TFTD HS:
review my presentation on pse_dll_power_type

TFTD YD:
There is an error in the comment and also what we have in D2.1 is correct due to approved remedy on tehsubject in D2.0

TFTD FS:
See D2.0 schindler_01_0916 for accepted changes that resulted in D2.1 figure 33-32.

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

Darshan, Yair Microsemi

*Comment Type* **TR** *Comment Status* **X** *Pres: Darshan17*

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

*SuggestedRemedy*

Adopt darshan_17_1116.pdf.

*Proposed Response* *Response Status* **W**

WFP

TFTD

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

Darshan, Yair Microsemi

*Comment Type* **TR** *Comment Status* **D** *Pres: Darshan17*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

That text cannot go in the "constants" section. It belongs in the PD state diagram intro section (33.3.3).

On page 132, line 50
Change: "Dual-signature Type 3 and Type 4 PDs shall provide the behavior of the state diagram shown in Figure 33–33."

to: "Dual-signature Type 3 and Type 4 PDs shall provide the behavior of the state diagram shown in Figure 33–33 over each pairset independently unless otherwise specified. All the parameters that apply 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."

TFTD YD:
The remedy is OK but there is more issues covered by darshan_17_1116.pdf

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

Yseboodt, Lennart — Philips

*Comment Type* **T** *Comment Status* **D** *PD SD*

"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* **W**

PROPOSED ACCEPT.

TFTD YD:
"The remedy should be ""A timer used to prevent Type 3 and Type 4 PDs from drawing more than I Inrush_PD andI Inrush_PD-2P during the PSE's inrush period after Tirush-2P min; See T delay-2P in Table 33-31."""

---

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

Beia, Christian — STMicroelectronics

*Comment Type* **E** *Comment Status* **D** *Editorial*

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* **W**

PROPOSED ACCEPT.

TFTD LY:
Better move this description to just before the dual-signature lists
Move section 33.3.3.15 to before 33.3.3.11

---

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

Stewart, Heath — Linear Technology

*Comment Type* **TR** *Comment Status* **D** *PD SD*

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* **W**

PROPOSED ACCEPT.

TFTD LY:
I'm OK to do this, but… we've fallen into the habit of giving very generic technical instructions to me, your friendly neighborhood editor. In this case, it is significant surgery on a state machine, without a specific instruction.

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

Darshan, Yair — Microsemi

*Comment Type* **TR** *Comment Status* **X** *Pres: Darshan16*

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* **W**

WFP

TFTD

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

Jones, Chad — Cisco

*Comment Type* **TR** *Comment Status* **D** *PD Power*

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* **W**

TFTD

We should not be putting reasons into the draft everywhere….

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 draw class 4 power or less from that pairset until it is powered on both pairsets."

What about a DS PD where power was there, but then removed?

TFTD CJ:
"This is not putting reasons everywhere. This is to clearly define misbehavior and prevent it. As for your question: the SHALL speaks for itself. If a DS is powered over 4P and then drops to 2P then it must drop power consumption to <25.5W. Anything else would be a hole for misbehavior. Also, having thought about it more this restriction needs to be placed on both ends. To effectively disallow this behavior, a shall is also needed on the PSE side (and in the SD). ""A Type 4 PSE shall not assign Class 5 to a dual-signature PD, when operating over 2-pair"". I'm guessing the SD will be a D2.1 To do item for me."

Response DNA: I think the fault case is much more complicated…how long does the PSE or PD have to reduce power?

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

Darshan, Yair — Microsemi

*Comment Type* **TR** *Comment Status* **X** *PD Power*

(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* **W**

TFTD

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

Schindler, Fred — Seen Simply, Cisco, T

*Comment Type* **TR** *Comment Status* **D** *PD Power*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

I believe this is OBE by 233.

TFTD

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

Schindler, Fred — Seen Simply, Cisco, T

*Comment Type* **TR** *Comment Status* **D** *PD Power*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

I believe this is OBE by 233.

TFTD

TFTD CJ:
after 233 is accepted this should be rejected. There is no need to mention DLL here. The class requested via physical layer is the max. there is nothing saying that it can never draw more than originally granted via L1 if more information becomes available - so long as the PD was designed to advertise that extra power draw via L1.

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

Schindler, Fred — Seen Simply, Cisco, T

*Comment Type* **TR** *Comment Status* **X** *PD Class*

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* **W**

TFTD

TFTD CJ:
you are over complicating this. The value pd_req_class is a constant and it equals the physical layer class. All we need to ensure is that a PD that gets less power than requested via physical layer is allowed to later move to a higher power IF THE PSE initiates the increase.

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

Darshan, Yair Microsemi

*Comment Type* **T** *Comment Status* **X** *Pres: Darshan3*

(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* **W**

WFP

TFTD

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

Stewart, Heath Linear Technology

*Comment Type* **E** *Comment Status* **D** *Editorial*

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 PSE

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

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT.

TFTD LY:
Confusing: maximum implies that Pds regularly change their requested Class, or ask for something differently.
No change to draft.

TFTD FS:
The comment appears to be referencing “PD classification” to get the duplicate definition for “requested class”. The definitions for assigned and requested are not clear—see my comments 116, 120, 121. The proposed definition fits assigned class but not requested class. Also see 235.

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

Jones, Chad Cisco

*Comment Type* **ER** *Comment Status* **D** *PD Class*

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 149 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* **W**

PROPOSED ACCEPT.

TFTD LY:
The word “cannot” is a shall-in-hiding.
We already have a shall, we don’t need to repeat it in different words.

TFTD YD:
The remedy is OK but conain Typo "35".

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

Beia, Christian STMicroelectronics

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

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* **W**

TFTD

This is a hold over from the AT spec…

The title really means "How PDs respond to a single-event class"

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

Jones, Chad Cisco

*Comment Type* **E** *Comment Status* **X** *PD Class*

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* **W**

TFTD

This is leftover from AT (so you tell me what you were thinking).

TFTF CJ:
"dug up the history. Christian made this comment against D4.0 in AT: Since the definition of a 1-Event class signature is the response of a (whatever) PD to 1- Event classification, paragraph 33.3.5.1 should describe the behavior of Type 2 PDs as well. Alternatively, modify the definition of 1-event class signature in clause 1.4. this is a valid point, and hence we accomodated. This is the text from AT:PDs implementing a 2-Event class signature shall return Class 4 in accordance with the maximum power draw, Pclass_PD, as specified in Table 33–18. Since 1-Event classification is a subset of 2-Event classification, Type 2 PDs respond to 1-Event classification with a Class 4 signature. Type 1 PDs may choose to implement a 2-Event class signature and return Class 0, 1, 2, or 3 in accordance with the maximum power draw, Pclass_PD. The Type 2 PD’s classification behavior shall conform to the electrical specifications defined by Table 33–17.this is in the 1-event class sig section. So here's what happened: the text got moved around trying to cordon off T1 from T2 from T3,4. in doing that, we lose the context and the statement has become orphaned and loses it's effectiveness. I think the statement 'Since 1-Event classification is a subset of 2-Event classification' should be reinsterted into this section."

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

Yseboodt, Lennart Philips

*Comment Type* **TR** *Comment Status* **D** *PD Class*

"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* **W**

PROPOSED ACCEPT.

TFTD HS:
Ok with idea but missing suffix, pd_max_power"_mode"(M)

TFTD YD:
"Lannart in his comment said: ""pse_power_level doesnt equate to the assigned class which is what the pd needs to conform to"" is correct only to the parameters that are functions of the assigned class and not all the parameters are function of the assigned class. Some of the parameters are function of the required class only such Iinrush and Iinrush-2P that we will discuss it in the meeting this week.The remedy should be: ""Type 3 and Type 4 PDs shall conform to the electrical requirements as defined by Table33-31 per the PD type column unless otherwise specified. ""in the Class in the pd_max_power variable or pd_max_power(M) variable.""In Table 33-1 and only there in one place to review all parameters and decide which parameter is used per the assigned class or per the required class or per the PD type. Example: The PD can't change its inrush or Iinrush-2P per the assigned class! (althoug this is what it says in D2.1) PDs are always designed with Inrush and Inrush-2P that for their required class or advertized class. For that matter, the current wording is OK (pse_power_level) but not for all parameters."

TFTD FS:
This comment is not clear and is related to other concerns about power assigned.

pse_power_level related definition on page 144, indicates “A control variable that indicates to the PD the level of power the PSE is supplying …”

page 149 Line 31,
“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. The PD shall conform to the assigned Class, regardless of the Class it requested.”

pse_power_level the power the PSE is providing to the PD.
Assigned what the power the PD gets from the PSE. Why is assigned not equal to pse_power_level?
Requested class power is what the PD wants but may not get from the PSE.

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

Schindler, Fred Seen Simply, Cisco, T

*Comment Type* **TR** *Comment Status* **D** *PD Class*

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* **W**

PROPOSED ACCEPT.

TFTD LY:
Currently there is no “shall” associated with PDMaxPowerValue. The proper fix is to do that.
Append to 33.3.8.2: “PDs that have succesfully completed DLL classification, shall not exceed power consumption of PDMaxPowerValue as defined in 33.5.3.3.

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

Stover, David — Linear Technology

*Comment Type* **E** *Comment Status* **D** *Editorial*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TACS should be in ms.

Change Tauto_pd1 and Tauto_pd2 to seconds (s).

I don't believe there is a rule saying all timing parameters in a table have to have the same unit…

TFTD LY:
IEEE-SA Standards Style Manual, 13.3.1 “The same units of measure shall be used throughout each column; ohms shall not be combined with megaohms, millimeters with centimers, or seconds with minutes.”
No change to draft.

Response DNA: Our draft does not alwasys follow this rule (thus my belief it didn't exist). See Table 33-19. ms vs s, mV vs. V.

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

Yseboodt, Lennart — Philips

*Comment Type* **TR** *Comment Status* **D** *PD Class*

"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* **W**

PROPOSED ACCEPT.

TFTD YD:
The problem is not clear and what has chaged in the remedy to resolv ethe comment? Why PD is not required to measure the length of LCE? Why the "default value" was removed?

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

Yseboodt, Lennart Philips

*Comment Type* **ER** *Comment Status* **D** *PD Power*

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* **W**

PROPOSED ACCEPT.

TFTD CB:
I prefer “as function of the assigned Class”

TFTD YD:
"All the comments that Lennart wants to change in the title to ""assigned class"" has huge significant meaning so it can't be technical! I am against this remedy in giving the editor free licens to decide what parameter is appropriate and what is not to be per the assigned class. Reject this remedy and make sure that per item in thetable it is specified if it is per the assigned class or not. Exsample: Iinrush and Iinrush-2P cant be per the assigned class. It must be per the required class."

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

Yseboodt, Lennart Philips

*Comment Type* **E** *Comment Status* **D** *Editorial*

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* **W**

PROPOSED ACCEPT.

TFTD YD:
"It measn that the value is peak (maximum) during inrush period unless otherwise specified. This need discussion since below Tirush_PD_max=50msec we are allowed to have transients etc."

*Cl* **33** *SC* **33.3.8** *P* **154** *L* **42** # 78

Darshan, Yair Microsemi

*Comment Type* **TR** *Comment Status* **X** *Pres: Darshan18*

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* **W**

WFP

TFTD

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*Cl* **33** *SC* **33.3.8** *P* **154** *L* **42** # 79

Darshan, Yair Microsemi

*Comment Type* **TR** *Comment Status* **X** *Pres: Darshan18*

(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* **W**

WFP

TFTD

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*Cl* **33** *SC* **33.3.8** *P* **155** *L* **18** # 241

Yseboodt, Lennart Philips

*Comment Type* **TR** *Comment Status* **D** *PD Inrush*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

It applies to both Type 1 and Type 2.

Change PD Type for Item 7 to "All".

TFTD CB:
T_inrush_PD is not relevant for Type1 PDs since they were never asked to limit Iinrush. It may be read as a new requirement.

Response DNA: Iinrush applies to Types 1 and 2 in the 2012 standard. Also the text that says PDs must control inrush if C > 180uF has no stipulation on Type (so it applies to both Type 1 and 2). Tdelay does not apply to Type 1.

*Cl* **33** *SC* **33.3.8** *P* **156** *L* **16** # 243

Yseboodt, Lennart Philips

*Comment Type* **TR** *Comment Status* **D** *PD Power*

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* **W**

PROPOSED ACCEPT.

TFTD YD:
"This note was added by Pete. His concern was that in dual-signature PD implemented with single load which is affected by unbalance, one pairset will have a bit higher power than Pclass-PD-2P and the other will be lower than Pclass-PD-2P which will result in violation of Pclass-PD-2P per pair set and Pclass-2P in the PSE.I am suggesting that in the remedy we write: ""Dual-signature PD implemented with single load may be affected by pair-to-pair unbalance, in which one pairset will have a bit higher power than Pclass_PD-2P and the other pairset will be lower than Pclass-PD-2P which may result in violation of 33.3.8.10. Therefore it is recommended that PClass_PD for dual-signature PDs that are implemented with single load, may be limited to less than PClass_PD."""

*Cl* **33** *SC* **33.3.8.1** *P* **157** *L* **11** # 244

Yseboodt, Lennart Philips

*Comment Type* **TR** *Comment Status* **X** *Pres: Yseboodt2*

"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* **W**

WFP

TFTD

*Cl* **33** *SC* **33.3.8.2** *P* **157** *L* **20** # 245

Yseboodt, Lennart Philips

*Comment Type* **E** *Comment Status* **D** *PD Power*

"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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

"PClass_PD and PClass_PD-2P in Table 33-31 are determined per the PDs assigned Class."

TFTD YD:
This is confusing; I guess there is "PSE assigned class" term and "PD assigned class" term. Where those two termsar edefined?

*Cl* **33** *SC* **33.3.8.2.1** *P* **157** *L* **37** # 62

Darshan, Yair Microsemi

*Comment Type* **TR** *Comment Status* **X** *Pres: Darshan9*

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* **W**

WFP

TFTD

*Cl* **33** *SC* **33.3.8.2.1** *P* **157** *L* **38** # 32

Bennett, Ken — Sifos Technologies, In

*Comment Type* **T** *Comment Status* **X** *Extended Power*

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* **W**

TFTD

*Cl* **33** *SC* **33.3.8.2.2** *P* **157** *L* **47** # 60

Darshan, Yair — Microsemi

*Comment Type* **T** *Comment Status* **D** *PD Power*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Verification of a PD? This is about system stability. What does that mean? Also multiple language fixes:

Change to text:

"Verification of stability is achieved when the PD ripple and noise content as defined in Table 33-28 is met while the PD is operating at or below Pport_PD_max while being powered by a voltage source set in the range of Vport_PSE-2P (as defined in Table 33-19) through a series resistance with value R Ch (as defined in Table 33-1).

TFTD HS:
“series” is typo should be “series”

Response DNA: fixed. (although I think your TFTD got autocorrected)

*Cl* **33** *SC* **33.3.8.3** *P* **158** *L* **24** # 247

Yseboodt, Lennart Philips

*Comment Type* **TR** *Comment Status* **D** *PD Inrush*

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* **W**

PROPOSED ACCEPT.

TFTD HS:
The reference to 33.2.8.5 (and by nesting to 33.2.8.5.1) needs to remain as stated previously in order to inform the PD implementer of the exclusions of 33.2.8.5.1.

TFTD FS:
Replace the proposed sentence with,
“PD requirements are impacted by PSE current limits covered in 33.2.8.5.”

*Cl* **33** *SC* **33.3.8.4.1** *P* **160** *L* **5** # 33

Bennett, Ken Sifos Technologies, In

*Comment Type* **T** *Comment Status* **X** *PD Power*

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* **W**

TFTD

*Cl* **33** *SC* **33.3.8.5** *P* **160** *L* **33** # 34

Bennett, Ken Sifos Technologies, In

*Comment Type* **T** *Comment Status* **X** *Pres: Bennet1*

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* **W**

WFP

TFTD

*Cl* **33** *SC* **33.3.8.10** *P* **164** *L* **46** # 30

Beia, Christian STMicroelectronics

*Comment Type* **T** *Comment Status* **D** *PD Unbalance*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

If Rsource_min and max include Rpair_PD min and max, this is better langauge:

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 and 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).

If not, remove Rpair_PD from this sentence, but keep other changes.

*Cl* **33** *SC* **33.3.8.10** *P* **165** *L* **24** # 43

Darshan, Yair Microsemi

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

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* **W**

TFTD

*Cl* **33** *SC* **33.3.9** *P* **166** *L* **1** # 249

Yseboodt, Lennart Philips

*Comment Type* **TR** *Comment Status* **D** *PD MPS*

"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* **W**

PROPOSED ACCEPT.

TFTD FS:
This is the only shall for Table 33-33. See page 165 Line 39,
“The values of Iport_MPS, IPort_MPS-2P, TMPS_PD, and TMPDO_PD are shown in Table 33–33.”

If this comment’s removal is accepted then also amend the sentence called out to state,
“The values of Iport_MPS, Iport_MPS-2P, TMPS_PD, and TMPDO_PD shall conform to the values shown in Table 33–33.”

*Cl* **33** *SC* **33.3.9** *P* **166** *L* **10** # 49

Darshan, Yair Microsemi

*Comment Type* **E** *Comment Status* **D** *Editorial*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to:
"input current as a function of assigned Class to a single-signature PD"

TFTD LY:
Inconsistent with comment #239
Use same resolution as #239 for Table 33-33

*Cl* **33** *SC* **33.4.1.1.1** *P* **167** *L* **53** # 250

Wendt, Matthias Philips

*Comment Type* **E** *Comment Status* **D** *Editorial*

"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* **W**

PROPOSED ACCEPT.

TFTD FS:
This is legacy text and should be discussed.

*Cl* **33** *SC* **33.4.3** *P* **169** *L* **15** # 290

Zimmerman, George — CME Consulting, Aqua

*Comment Type* **ER** *Comment Status* **D** *Editorial*

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* **W**

PROPOSED ACCEPT.

TFTD FS:
If we want 3-sig figs then 1.0 should be 1.00 and not 1. We should discuss these changes. If we want less than 3 sigfigs for this section then we should state this in a note.

*Cl* **33** *SC* **33.5** *P* **180** *L* **26** # 39

Darshan, Yair — Microsemi

*Comment Type* **TR** *Comment Status* **X** *Pres: Darshan11*

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* **W**

WFP

TFTD

*Cl* **33** *SC* **33.5.5** *P* **189** *L* **5** # 251

Yseboodt, Lennart — Philips

*Comment Type* **TR** *Comment Status* **X** *Pres: Yseboodt4*

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* **W**

WFP

TFTD

*Cl* **33** *SC* **33.7.2.3** *P* **192** *L* **5** # 252

Yseboodt, Lennart — Philips

*Comment Type* **T** *Comment Status* **D** *PICS*

PICS PD Major option PDT1 is missing.

*SuggestedRemedy*

Add item PDT1.

*Proposed Response* *Response Status* **W**

TFTD

Why isn't this in the published standard?

*Cl* **33** *SC* **33.7.2.3** *P* **192** *L* **18** # 253

Yseboodt, Lennart — Philips

*Comment Type* **E** *Comment Status* **D** *PICS*

PICS *PDCL: Classification for PDT1, PDT3 and PDT4 is missing.

*SuggestedRemedy*

Add Status PDT1:O, PDT3:M, PDT4:M.

*Proposed Response* *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add PDT3:M, PDT4:M

TFTD

Why isn't Type 1 in the published standard?

*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* **W**

TFTD

Why isn't Type 1 listed in published standard?

*Cl* **33** *SC* **33.7.3.2** *P* **195** *L* **45** # 259

Yseboodt, Lennart Philips

*Comment Type* **E** *Comment Status* **D** *PICS*

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* **W**

PROPOSED ACCEPT IN PRINCIPLE.

TFTD

Add new PIC.

Also, PIC PSE21 only applies if delivering 4-Pair power, how do we indicate that? Do we need a new capability (or whatever it is called)?

*Cl* **33** *SC* **33.7.3.2** *P* **196** *L* **17** # 260

Yseboodt, Lennart Philips

*Comment Type* **E** *Comment Status* **D** *PICS*

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* **W**

PROPOSED ACCEPT.

TFTD

This is defintely wrong and we are loosening a requirement, so I don't see any need for maintenance…Chair?

TFTD CJ:
question of scope: note sent to David and Adam asking for opinion. In the mean time, this is definitely wrong and should be fixed. The question is do we have to file a maintenance since it is a relaxing of conditions and an obvious error.

*Cl* **33** *SC* **33.7.3.2** *P* **201** *L* **27** # 262

Yseboodt, Lennart Philips

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

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* **W**

TFTD

This was added as a maintenance request between AT and BT…I guess they never added a PIC for it.

*Cl* **33** *SC* **33.7.3.3** *P* **205** *L* **30** # 263

Yseboodt, Lennart Philips

*Comment Type* **E** *Comment Status* **D** *PICS*

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* **W**

TFTD

See 264

*Cl* **33** *SC* **33.7.3.3** *P* **205** *L* **36** # 264

Yseboodt, Lennart Philips

*Comment Type* **T** *Comment Status* **D** *PICS*

PICS missing for page 151, line 49.

*SuggestedRemedy*

Add PICS.

*Proposed Response* *Response Status* **W**

TFTD
See 263

Are these two statements redundant?

1. The PD shall conform to the assigned Class, regardless of the Class it requested.

2. 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 is just a proxy for assigned class…

*Cl* **33** *SC* **33.7.3.3** *P* **205** *L* **36** # 265

Yseboodt, Lennart Philips

*Comment Type* **T** *Comment Status* **D** *PICS*

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* **W**

PROPOSED ACCEPT.

TFTD

Ken, does your baseline still have this shall?

*Cl* **33** *SC* **79** *P* **208** *L* **2** # 42

Darshan, Yair Microsemi

*Comment Type* **TR** *Comment Status* **X** *Pres: Darshan5*

(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* **W**

WFP

TFTD

*Cl* **79** *SC* **79.3.2.2** *P* **219** *L* **36** # 283

Yseboodt, Lennart — Philips

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

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* **W**

TFTD as requested

*Cl* **79** *SC* **79** *P* **223** *L* **6** # 84

Darshan, Yair — Microsemi

*Comment Type* **TR** *Comment Status* **X** *Pres: Darshan12*

(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* **W**

WFP

TFTD

*Cl* **79** *SC* **79.3.2.6d** *P* **224** *L* **9** # 129

Schindler, Fred — Seen Simply, Cisco, T

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

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* **W**

TFTD

*Cl* **33** *SC* **79.3.2.6d** *P* **224** *L* **12** # 41

Darshan, Yair — Microsemi

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

(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* **W**

TFTD

*Cl* **79** *SC* **79.3.8.2** *P* **227** *L* **9** # 130

Schindler, Fred — Seen Simply, Cisco, T

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

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* **W**

TFTD

*Cl* **79** *SC* **79.3.8.1** *P* **227** *L* **17** # 100

Jones, Chad Cisco

*Comment Type* **TR** *Comment Status* **D** *LLDP*

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* **W**

PROPOSED REJECT.

Just because PSEs aren't supposed to supply greater than 57, why would we not allow the PD to tell the PSE that its voltage is higher?

TFTD CJ:
someone needs to explain to me why it's ok to have an upper limit set well above the actual physical limit. This implies to me that it's OK to provide more than 57V. This is simply not true.

Response DNA: The PD is not responsible for providing its voltage. Why should we outlaw it from telling a PSE that the voltage is too high or that it is plugged into an AUX supply that is higher?

*Cl* **79** *SC* **79.3.8.2** *P* **228** *L* **42** # 101

Jones, Chad Cisco

*Comment Type* **TR** *Comment Status* **D** *LLDP*

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* **W**

PROPOSED REJECT.

Just because PSEs aren't supposed to supply greater than 57, why would we not allow the PSE to report a higher voltage?

TFTD CJ:
worst case, this number could be 60V, as that is the absolute max allowed at the PI be free no longer conforming to SELV.

*Cl* **33** *SC* **33A.5** *P* **234** *L* **17** # 44

Darshan, Yair Microsemi

*Comment Type* **TR** *Comment Status* **X** *Pres: Darshan4*

"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* **W**

WFP

TFTD

*Cl* **33A** *SC* **33A** *P* **239** *L* **1** # 270

Yseboodt, Lennart Philips

*Comment Type* **ER** *Comment Status* **D** *Editorial*

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* **W**

PROPOSED ACCEPT.

TFTD YD:
Dissagre to replace it. Add all lennarts comments on the subject to Yair's TDL (I wrote 33A.1 it and I can adress all the comments).

*Cl* **33A** *SC* **33A.1** *P* **239** *L* **33** # 273

Yseboodt, Lennart Philips

*Comment Type* **T** *Comment Status* **D** *Annex*

"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* **W**

PROPOSED ACCEPT.

TFTD YD:
Remedy is OK but the table is 33-19 and not 33-11.

*Cl* **33A** *SC* **33A.1** *P* **240** *L* **24** # 275

Yseboodt, Lennart Philips

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

"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* **W**

TFTD

TFTD YD:
Don't remove the quoted text and Figure. To add it to Yair's TDL to adress this comment to tie the figures to the text.

*Cl* **33A** *SC* **33A.1** *P* **241** *L* **1** # 276

Yseboodt, Lennart Philips

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

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* **W**

TFTD

Possible OBE by 275.

*Cl* **33B** *SC* **33B** *P* **245** *L* **1** # 286

Yseboodt, Lennart Philips

*Comment Type* **ER** *Comment Status* **X** *Pres: Yseboodt5*

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* **W**

WFP

TFTD

*Cl* **33** *SC* **33B.1** *P* **245** *L* **23** # 70

Darshan, Yair Microsemi

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

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* **W**

TFTD

This sentence doesn't make sense to me. How does a compliant load include part of the PSE PI effective resistance?

*Cl* **33** *SC* **33C.1** *P* **251** *L* **14** # 106

Lukacs, Miklos Silicon Labs

*Comment Type* **TR** *Comment Status* **X** *Pres: Lukacs1*

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* **W**

WFP

TFTD

*Cl* **33** *SC* **Annex 33C** *P* **251** *L* **14** # 40

Darshan, Yair Microsemi

*Comment Type* **TR** *Comment Status* **X** *Pres: Lukacs1*

(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 can be 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* **W**

WFP

TFTD

*Cl* **33** *SC* **33C.1** *P* **251** *L* **14** # 107

Lukacs, Miklos Silicon Labs

*Comment Type* **TR** *Comment Status* **X** *Pres: Lukacs1*

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* **W**

WFP

TFTD

*Cl* **33** *SC* **33C.2** *P* **255** *L* **20** # 105

Lukacs, Miklos Silicon Labs

*Comment Type* **TR** *Comment Status* **X** *Pres: Lukacs1*

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* **W**

WFP

TFTD