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 **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 **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* **33.2.5.7** *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

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

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* **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* **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* **33.5.12** *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

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** # 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* **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* **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

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* **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* **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* **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* **33.2.7.3** *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* **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* **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* **33.2.8.2** *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* **W**

PROPOSED REJECT.

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** # 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* **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* **33.2.8.4.1** *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* **33.2.8.11** *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* **33.3.1** *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* **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

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.

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

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 **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?

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

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** # 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

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).

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

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

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* **33.3.8.2.1** *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* **33.3.8.4.1** *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* **33.5** *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?

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** # 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* **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* **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 **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.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

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* **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.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* **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