Cl **00** *SC* *P* *L* # 182

Diab, Wael Broadcom

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

100BASE-TX is specified to have a 350uH output impedence per TPPMD. This is not a channel requirement but a interoperability requirement for 100BASE-TX. Operation of a midspan on Alternative A can disrupt the output impedence if not constrained appropriately. We have text from 802.3-2005 as well as backwards compatibility critters to make sure that 100BASE-TX is never disturbed.

Further, it is impossible to limit a gigabit midspan from having a legacy 100BASE-TX sit on the Alternative A pairs on the non-powered side.

SuggestedRemedy

Either
- Prohibit the operation of midspans on Alternative A as we had in 802.3-2005

OR

- Change the Note on line 32 to a Shall statement

OR

- Specifically reference the inductance requirement

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Option one is not an option unless we are dropping 4P. Plus technically speaking, you will be powering data pairs in a gig midspan in Alt B. How can we mandate which data pairs when the PD will accept power via either?

I would entertain changing the note if I knew the page and line… even the subclause would help.

Cl **00** *SC* **0** *P* *L* # 179

Diab, Wael Broadcom

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

Per comment 233 of D0.9 we need to look at the changes to Clause 30 (30.9 and 30.10) once the state machines are done.

SuggestedRemedy

Placeholder comment to update the attributes in management once the state machines are stable.

Suggest circulating the relevant C30 text (30.9 and 30.10) with the next draft, adding an editor's not upfront that these attributes need to be updated when the underlying statemachines are stable.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Acceptance results in no change to text.

Are we ready to add clause 30 text? State diagrams are not stable yet. Text that the SD is supposed to reflect is still being crafted.

Cl **00** *SC* **0** *P* *L* # 171

Diab, Wael Broadcom

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

Regarding the figures and for the purpose of this review it may be easier to include the figures being replaced with the original figure with a strike through it (or through the title) so its easy to see the changes.

SuggestedRemedy

Pls. see comment

Proposed Response *Response Status* **W**

TF to decide if they want editor to pull figures from AF and place back in draft with a strike through.
Alternatively, you can get copies of AF for free and just refer to that. See the comment editor if you need help getting the PDF.

Cl **00** *SC* **0** *P* **0** *L* **0** # 3

LANDRY, MATTHEW SILICON LABS

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

The text variously refers to link segments and link sections. Is there a difference?

SuggestedRemedy

If there is no different, normalize the text to consistently use one of 'link segment' or 'link section.'

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

There is a difference. We need to ensure they are used correctly:

1.4.199 link section: The portion of the link from the PSE to the PD.

1.4.200 link segment: The point-to-point full-duplex medium connection between two and only two Medium Dependent Interfaces (MDIs).

Cl **00** *SC* **0** *P* **0** *L* **0** # 4

LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **D** *ez*

Many references to figures in the Annexes are improperly documented. E.g., Figure 33C-6 is improperly cited as Figure 33C.6.

SuggestedRemedy

Fix references.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **figure 33C-4** *P* **112** *L* **26** # 107

Darshan, Yair Microsemi Corporation

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

Draft 1.0:
We need to update this drawing per changes made by figure 33-9a.
In addition figure 33C-6 should be updated as well to reflect type 1 and type 2 PSE requirements.
The normative text uses these drawings in many locations for additional information.

SuggestedRemedy

After concluding the normative text, we need to update Annex 33C.
I am proposing to form ad hoc for this task.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Form adhoc at appropriate time. Comment results in no change to current text - unless we want to add editor's note to remind of forming an adhoc to update after text completion.

Cl **33** *SC* **C.1.8** *P* **115** *L* **52** # 266

Stanford, Clay Linear Technology

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

We no longer reference Trise. Will need to re-write section.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

We eagerly await your proposed text.

Cl **01** *SC* **1.5** *P* **13** *L* **16** # 174

Diab, Wael Broadcom

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

Please insert the new abbreviation of the SOA curve.

SuggestedRemedy

Area of Specified Operation - ASO

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Actually the last recommendation came from the editor: "but do we even need another acronym? Why don't we just refer to the figure as required and see how that goes?" to which I replied: "We can continue to call it SOA in the meetings but it will be figure 33-X in the text." and the discussion ended. This is what is in D1.0.

Cl **01** *SC* **1.3** *P* **13** *L* **6** # 222

Law, David 3Com

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

Add ISO/IEC technical report on PoE guidelines to normative reference list in subclause 1.3.

SuggestedRemedy

Add to subclause 1.5 References:

ISO/IEC TR 29125 (draft) Information technology—Telecommunications cabling guidelines for remote powering of data terminal equipment. Draft document number ISO/IEC JTC 1/SC 25 N XXXX.X.

Editors' Note: To be removed prior to final publication.
The vote on the NWIP for this Technical Report is currently taking place. This reference may need updated as this project progresses.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33D** *SC* **1** *P* **134** *L* **1** # 25

LANDRY, MATTHEW SILICON LABS

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

Annex 33D refers only to 15.4W systems. This informative annex should be aligned with the new power level.

SuggestedRemedy

Replace 15.4W references with "PPort max as defined in Table 33-5."

Replace 44V to 57V references with "VPort min and VPort max as defined in Table 33-5."

Replace 12.95W references with "PPort max as defined in Table 33-12."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33E** *SC* **1** *P* **137** *L* **1** # 26

LANDRY, MATTHEW SILICON LABS

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

Annex 33E refers to 350mA as max current. This needs to be aligned with ICable.

SuggestedRemedy

Either make the text generic with references to variables from tables, or add relevant specs for ICable-level currents.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

make the text generic with references to variables from tables

Cl **33E** *SC* **1** *P* **138** *L* **17** # 27

LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **D** *ez*

Equation does not conform to style guide.

SuggestedRemedy

Reset equation to conform to IEEE style manual.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **33G** *P* **140** *L* # 117

Vetteth, Anoop Cisco

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

1) There is a calculation error in the slew rate for test case 2. The voltage ramp is 5.6V in 2.4ms which works out to be 2333V/s.

2) The first test case refers to the case when voltage steps up due to simultaneous load drop on multiple ports. the voltage step can be instantenous in this case.

SuggestedRemedy

1) Correct the slew rate.

2) Change text to greater than 3.5V/us

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33G** *SC* **1.2** *P* **140** *L* **44** # 28

LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **D** *ez*

The denoting of mA units does not follow the style manual.

SuggestedRemedy

Change "5 [mA]" to "{5}mA"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **1** *P* **15** *L* **13** # 42

Jetzt, John Avaya, Inc.

Comment Type **E** *Comment Status* **D** *ez*

Delete comma after "Clause 25".

SuggestedRemedy

...in Clause 25 and Clause 40.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **1** *P* **15** *L* **22** # 234

Stanford, Clay Linear Technology

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

Correct Classification description that talks about classification prior to power up.

d) Methods to classify devices based on their power needs PRIOR TO POWER UP

Remove "prior to power up".

SuggestedRemedy

IS:
d) Methods to classify devices based on their power needs prior to power up

SHOULD BE:
d) Methods to classify devices based on their power needs

Proposed Response *Response Status* **O**

see 163

Cl **33** *SC* **1** *P* **15** *L* **22** # 163

Jones, Chad Cisco

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

"Methods to classify devices based on their power needs prior to power up." DLL is one of the classification methods covered by this sentence and it cannot occur prior to power up.

SuggestedRemedy

remove the words "prior to power up"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **1.1** *P* **15** *L* **50** # 43

Jetzt, John Avaya, Inc.

Comment Type **E** *Comment Status* **D** *ez*

Add comma after "modification".

SuggestedRemedy

"... without modification, and ..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **33.1.1** *P* **15** *L* **50** # 230

Law, David 3Com

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

Make the Type 2 cabling requirements clear with a summary of subclause 33.1.4 and 33.1.5.

[1] State that Type 2 requires ISO/IEC 11801:1995 Class D cabling.
[2] State that Type 2 requires derating of the cable operating temperature.
[3] Reorder so that MDI related text and cabling related text is grouped together.

SuggestedRemedy

Change:

'.. and 1000BASE-T without modification and Type 1 operation adds no significant requirements to the cabling. The use of other IEEE 802.3 MDIs is beyond the scope of this clause. Type 2 operation over cabling systems of Class D or lower is beyond the scope of the clause.'

to read:

'.. and 1000BASE-T without modification. The use of other IEEE 802.3 MDIs is beyond the scope of this clause. Type 1 operation adds no significant requirements to the cabling. Type 2 operation requires ISO/IEC 11801:1995 Class D or better cabling and a derating of the cabling maximum ambient operating temperature. Type 2 operation over other cabling systems is beyond the scope of the clause.'

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

see 55 though this might be the better remedy

Cl **33** *SC* **1.1** *P* **15** *L* **51** # 122

Schindler, Fred Cisco Systems

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

"Type 2 operation over cabling systems of Class D or lower is beyond the scope of the clause." Is in correct.

SuggestedRemedy

Restate this as:
"Type 2 operation is specified over cabling systems of Class D or higher."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

see 55

Cl **33** *SC* **1.1** *P* **15** *L* **52** # 55

Vetteth, Anoop Cisco

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

Type 2 operation over ISO/IEC 11801-1995 class D is an objective of IEEE 802.3at task force

SuggestedRemedy

Change the sentence to:
Type 2 operation over cabling systems lower than ISO/IEC 11801:1995 Class D is beyond the scope of the clause

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See 153, 122, 230, 180

Cl **33** *SC* **1** *P* **15** *L* **52** # 153

Sanita', Gianluca Nokia Siemens Networ

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

The following statements are in contrast:

33.1.1 Page 15 Line 52
"Type 2 operation over cabling systems of Class D or lower is beyond the scope of the clause"

33.1.5 Page 17 Line 44
"Type 2 operations requires Class D cabling as specified in ISO/IEC 11801:1995"

SuggestedRemedy

Change 33.1.1 Page 15 Line 52 to:
"Type 2 operation over cabling systems of Classe lower than D is beyond the scope of the clause"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

see 55

Cl **33** *SC* **1.1** *P* **15** *L* **53** # 180
Diab, Wael Broadcom

Comment Type **TR** *Comment Status* **D**
The new text is innacurate. It should be lower than Class D and not including Class D.

SuggestedRemedy
Change "of Class D or lower" to "lower than Class D"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

see 55

Cl **33** *SC* **1.4** *P* **17** *L* **30** # 44
Jetzt, John Avaya, Inc.

Comment Type **E** *Comment Status* **D** *ez*
Add section "33.1.5" to the editing instruction.

SuggestedRemedy
"Insert section 33.1.4 and section 33.1.5:"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **33** *SC* **33.1.4** *P* **17** *L* **31** # 216
Law, David 3Com

Comment Type **ER** *Comment Status* **D**
The derating of the cabling only applies to Type 2.

SuggestedRemedy
Change the title to read 'Type 2 cabling derating'.

Proposed Response *Response Status* **W**
PROPOSED ACCEPT IN PRINCIPLE.

OBE see 40

Cl **33** *SC* **1.4** *P* **17** *L* **32** # 40
Jetzt, John Avaya, Inc.

Comment Type **T** *Comment Status* **D**
Add "Type 2" to the section title.

SuggestedRemedy
"33.1.4 Type 2 cable derating"

Proposed Response *Response Status* **W**
PROPOSED ACCEPT.

Cl **33** *SC* **1.4** *P* **17** *L* **36** # 235
Stanford, Clay Linear Technology

Comment Type **T** *Comment Status* **D**
We specify ambient temperature 15C above cable rating. Seems we should specify Type 1 and Type 2 differently. Also we should clarify it to be the cable ambient temperature.

Say something like:

For Type 2 operation, the cable ambient temperature must be 15C below...
For Type 1 operation, the cable ambient temperature must be 5C below....

SuggestedRemedy
Changes noted with CAPS.

IS:
To use IEEE Std P802.3at™-20XX, the ambient temperature must be 15°C below the cable temperature rating.
Reference ISO/IEC XXXX.

SHOULD BE:
FOR TYPE 2 OPERATION, THE CABLE ambient temperature must be 15C below the cable temperature rating.
FOR TYPE 1 OPERATION, THe CABLE AMBIENT TEMPERATURE MUST BE 5c BELOW THE CABLE TEMPERATURE RATING.

Proposed Response *Response Status* **O**

Agree, except AF did not have a temp derating spec. Does adding this text make present installations at 60C ambient non-compliant?

Cl **33** *SC* **33.1.4** *P* **17** *L* **36** # 221

Law, David 3Com

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

[1] The reference to IEEE Std 802.3at will not be useful once this amendment is consolidated into the base standard at some point in the future. In addition it is not correct that IEEE Std 802.3at will require this. IEEE Std 802.3at will include specifications for both Type 1 and Type 2 operation however it is only Type 2 operation that requires this.

[2] The reference should be of the usual 'see' format.

[3] The ambient doesn't have to be 15C below the cable rating, only its maximum must be 15C below the cable maximum rating.

SuggestedRemedy

Change :

'To use IEEE Std P802.3atTM-20XX, the ambient temperature must be 15C below the cable temperature rating. Reference ISO/IEC XXXX.'

to read:

'Type 2 operation requires a 15C reduction in the maximum ambient operating temperature of the cable (see ISO/IEC TR 29125).'

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **1.4** *P* **17** *L* **40** # 45

Jetzt, John Avaya, Inc.

Comment Type **E** *Comment Status* **D** *ez*

Add reference to Table 33-5.

SuggestedRemedy

" ... Icable is 0.72A. (See Table 33-5)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **1.4** *P* **17** *L* **40** # 161

Jones, Chad Cisco

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

"The value of Icable is 0.72A"
Is this the only location of Icable? Keep with the theme that numbers should be in tables this needs moved to a table.

SuggestedRemedy

Pick the correct table and place it there.

Proposed Response *Response Status* **O**

Cl **33** *SC* **1.4** *P* **17** *L* **41** # 167

Darshan, Yair Microsemi Corporation

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

Due to the fact that Icable that defined in this clause is actually a variable that may be subject to changes, and other parameters such Icut_max was defined based on this parameter as Icut_max=Icable*0.4/.35 or with equivalent terminologi in figures 33-9a,b,c, we need to define PD maximum average power as a function of Icable.

SuggestedRemedy

1. Scan the draft and replace "29.5W"

with:

"Ppd_max".

2. Add after line 40 in 33.1.4 the following text:

Ppd_max=Vport_min*Icable-Rc*Icable^2

Ppd_max is the maximum average power that a PD may consume at the PI.
Rc for Type 2 system is defined in 33.3.5.2.
Vport_min for Type 2 PSE as defined by Table 33-5 item 1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **1.5** *P* **17** *L* **43** # 181
Diab, Wael Broadcom

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

The requirement as written suggests that Type requires only Class D. I believe the intent was to clarify that for Class D we want <= 25 ohms and not to limit to class D.

SuggestedRemedy

Change "Type 2 operation requires Class D cabling"

to

"Type 2 operation requires Class D or better cabling. When Class D cabling is used, "

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change "Type 2 operation requires Class D cabling as specified in ISO/IEC 11801:1995. The cabling…"

to "Type 2 operation requires Class D or better cabling as specified in ISO/IEC 11801:1995. When Class D cabling is used, the cabling.."

Cl **33** *SC* **33.1.5** *P* **17** *L* **45** # 231
Law, David 3Com

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

While ISO/IEC 11801:1995 Class D cabling specifies a 40 Ohm maximum DC loop resistance, and therefore needs the exception stated, I believe that ANSI/TIA/EIA-568-A-1995 specifies a 25 Ohm maximum DC loop resistance [http://www.ieee802.org/3/af/public/may00/tr42_liaison.pdf] therefore does not require any exception.

SuggestedRemedy

Change the text:

'.. shall consist of Category 5 components as specified in ANSI/TIA/EIA-568-A-1995 and ISO/IEC 11801:1995 with the ..'

to read:

'.. shall consist of Category 5 components as specified in ISO/IEC 11801:1995 with the ..'

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **1.5** *P* **17** *L* **47** # 236
Stanford, Clay Linear Technology

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

Talks about DC loop resistance to be less than 25 ohms.

Doesn't it need to be 12.5 ohms?

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED REJECT.

I had this same question. It was explained to me that loop resistance is 1 wire down and one wire back (and not a pair down and back). Therefore 25 ohms is correct.

Cl **33** *SC* **33.1.5** *P* **17** *L* **50** # 215
Law, David 3Com

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

'This standard' (IEEE Std 802.3at) will include specifications for both Type 1 and Type 2 operation however it is only Type 2 operation that requires this cable specification.

SuggestedRemedy

Change the text:

'NOTE—ANSI/TIA/EIA-568-A-1995 provides a specification (Category 5) for media that meets the minimum requirements of this standard.'

to read:

'NOTE—ANSI/TIA/EIA-568-A-1995 provides a specification (Category 5) for media that meets the minimum requirements for Type 2 operation.'

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **2.1** *P* **18** *L* **20** # 46
Jetzt, John Avaya, Inc.

Comment Type **E** *Comment Status* **D** *ez*

Add Figure 33-4a and Figure 33-4b to reference.

SuggestedRemedy

"See Figure 33-4, Figure 33-4a, and Figure 33-4b."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **2.1** *P* **18** *L* **23** # 116

Darshan, Yair Microsemi Corporation

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

Draft 1.0:

The remedy for comment #158 for draft D0.9 which was accepted last meeting creates potential problems while it is possible to solve it with better wording.

Comment #158 issued by David Law shows that there is a problem in Draft 0.9 with the following test case which its summary is presented below:

1. The text states that 'Midspan PSEs shall use Alternative B when used in 10BASE-T/ 100BASE-TX systems'.
2. It then states that 'Midspan PSEs may support either Alternative A or B, or both when used in 1000BASE-T systems'.
3. Assuming that 10/100/1000BT "system" means that the link is operating with that type of PHY at each end.
4. A switch port may be 10/100/1000BASE-T capable.
5. Based on the above a 10/100/1000BASE-T non-PSE switch port that is connected to a Midspan 1000BT Midspan in order to operate the link at 1000BASE-T may not actually work at 1000BT so this would seem to force the Midspan to be Alternative B to meet the mandatory requirement for 10BASE-T and 100BASE-T operation while we allow 1000BT Midspan to be ALT A as well.

The remedy that was chosen was to allow Midspan to use either ALT A or B regardless if they are 10/100 or 1000BT.
At this point I believe the remedy is not the best one and it may cause problems such:

1. When we approved Midspan to work with ALT B only, we had a reason for it. We have shown that when using in 40 ohms cables (20 ohms total) with 175mA on each wire the Midspan is not affecting the channel specification.
(We don't have problems with cables that has 12.5 ohms loop as per the test results shown in previous meetings)
2. Per Wael's #279 comment, you may affect the impedance when using ALT A Midspan.

I believe that the best remedy would be based on the following principles:

1. 10/100BT Midspan shall use ALT B (as Draft D0.9 text).
   - If 10/100BT switch is connected ==> OK
   - If 1000BT switch is connected ==> Installation error ==> out of scope..
2. 1000BT Midspan shall use ALT B or ALT A for any Switch connected to it.
   - If a 10/100BT Switch is connected to 1000BT Midspan ==> OK
   - If 1000BT switch is connected ==> OK

If you look at Geoff's Comment # 207, He suggested a wording that looks to me as a way to solve David Law comment # 158.

I believe that allowing ALT A and B in 10/100 may cause unnecessary problems and require us to do tests to approve it and it is not worth it while fixing #158 requires just better wording.

SuggestedRemedy

Change lines 50-53 to:
"Midspan PSEs whose use is limited to 10BASE-T or 100BASE-TX systems shall use Alternative B. Midspan PSEs designed to support 1000BASE-T systems may support either Alternative A or B, or both."

Or equivalent wording that allows:
-10/100BT Midspan to use only ALT B
-1000BT Midspan to use ALT A or B regardless of the Switch capabilities if it is 10/100 or 10/100/1000BT.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The 1000BT midspan can't know if it is connected to a port operating at 10, 100 or 1000. Therefore it HAS to be perfectly legal for a 10BT or 100BTX midspan to operate under alternative A - as in when a 1000BT midspan using Alt A is inserted into a 10 or 100Mb link. This was the reasoning for the resolution of #158 last time.

Cl **33** *SC* **2** *P* **18** *L* **3** # 170

Diab, Wael Broadcom

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

Delete the phrase "as the name implies,". It adds no value

SuggestedRemedy

Delete the phrase "as the name implies,"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.1** *P* **18** *L* **32** # 232

Law, David 3Com

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

This note states that 'Midspans implementing Alternative A are not allowed to interfere with the data performance of a 100BASE-TX link. While true it is also true that Midspans implementing Alternative B are also not allowed to interfere with the data performance of a 100BASE-TX link, nor for that matter are Midspans in general allowed to interfere with the data performance of the link. This note however makes that fact unclear by specifically mentioning on 100BASE-TX.

The note then goes on to state 'Refer to Clause 25 for 100BASE-TX compatibility requirements.' If Clause 25 is examined, and in particular its requirement to comply with TP-PMD, two sets of requirements will be found. Set [1] is the channel requirements and set [2] is the MDI requirements. Now I believe that the channel requirements will be met by the conformance requirements found in subclause 33.4.8 'Midspan PSE device additional requirements' and its subclauses so set [1] is covered.

This leaves set [2] and since they are related to the MDI they would not normally apply to the midspan PI. I do believe however in the case of 100BASE-TX there is a requirement that need to be carried over to the PI. This requirement is found in ANSI X3.263-1995 (TP-PMD) subclause 9.1.7 'Worst case droop of transformer' which states:

Baseline Wander tracking by the receiver is dependent on the worst case droop that can be produced by a transmitter. Droop is directly related to the Open Circuit Inductance (OCL) which varies with temperature, manufacturing tolerance, and bias current.
Worst case Baseline Wander Frames vary the transformer bias which causes the droop to change with data content. This variation must be accounted for by the receiver to track the Baseline Wander over long frames. Variation in inductance caused by bias of the transformer can be on the order of 2:1.
The minimum inductance measured at the transmit pins of the AOI shall be greater than or equal to 350 uH with any DC bias current between 0 mA and +8 mA injected as shown in figure 13.

I understand that if a similar inductance is not provided at the output, that is transmit, side of both the data pairs through a Midspan, data corruption can occur due to baseline wander. Since this is a note it does not make this 350uH requirement mandatory, which it has to be.

So in summary:

[a] The note is misleading as it seems to imply that the requirement for no interference only applies to Alternative A 100BASE-TX Midspans.
[b] There is no need to reference the entire Clause 25 as most of the requirements there are also found in subclause 33.4.8
[c] There is one normative requirement which should be carried across to Midspans that support 100BASE-TX, the 350uH requirement. This however is not made mandatory for 100BASE-TX Midspans since this is only a note.

SuggestedRemedy

Add the following new subclause under 33.4.8:

33.4.8.2 Worst case droop of transformer

The Midspan shall meet the inductance requirements of ANSI X3.263-1995 (TP-PMD) subclause 9.1.7 at the pins of the PI used as 100BASE-T transmit pins with the additional requirement that the minimum inductance be meet with any DC bias current between 0 mA and TBD mA.

Editors note to be removed before publication
The need for the additional requirement and related DC bias current range are the subject of discussion in the 350uH adhoc.

Proposed Response *Response Status* **O**

see 85

Cl **33** *SC* **32** *P* **18** *L* **32** # 85

Darshan, Yair Microsemi Corporation

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

Draft 1.0:
The note here is redundant due to the fact that the Midspan is required to meet 33.4.8 requirements in page 72.

SuggestedRemedy

Remove Note in lines 32-34

Proposed Response *Response Status* **O**

see 232

Cl **33** *SC* **33.2.1** *P* **18** *L* **36** # 217

Law, David 3Com

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

We received the following mandatory comment in a recent MEC:

Please review the use of informative labeling within the document. From Clause 10 of the Style Manual: The draft standard shall contain normative text in the main clauses of the document, including footnotes to tables (see 15.5), and in normative annexes. Informative text shall be placed in notes (to text, tables, and figures), in footnotes within text, and in informative annexes. Interspersed normative and informative text is not allowed. Identification of normative or informative text shall be reviewed during the ballot of a document. Therefore, it is important that the working group consult an IEEE Standards project editor early with any questions.

SuggestedRemedy

Based on this either delete this note or move the figures to an annex.

I suggest that the note be deleted. It is clear that this is not normative, there is no shall related to them, these figures have been in Clause 33 since IEEE 802.3af-2003 was first published without the need for this note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **2.1a** *P* **18** *L* **37** # 1

LANDRY, MATTHEW SILICON LABS

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

Definitions properly belong in Clause 1.

SuggestedRemedy

Move these definitions to Clause 1. Remove 33.2.1a.

Proposed Response *Response Status* **O**

Cl **33** *SC* **2** *P* **18** *L* **4** # 123

Schindler, Fred Cisco Systems

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

"…optionally classify the PD, .." is legacy text that permits a Type 1 PSE to power a PD without classifying it when the PSE can provide class-0 power.

This concern also applies to p15, L22, d).

SuggestedRemedy

Restore the stricken text.

Proposed Response *Response Status* **W**

the problem is that in the case of Type 2 PSEs classification is not optional. We need to come up with text that will inform the reader when it is optional.

Cl **33** *SC* **Figure 33-4** *P* **19** *L* **54** # 155

Sanita', Gianluca Nokia Siemens Networ

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

Missing Midspam PSE, Altenative A.
It seems that this is not allowed from the standard.

SuggestedRemedy

Insert Midspam PSE, Alternative A figure

Proposed Response *Response Status* **O**

presently 10/100Mb alt A midspans are disallowed. With the allowance of 1000Mb alt A midspans that could conceivably be used in a 10 or 100Mb link, this needs reviewed. CE feels it needs allowed and yet another informative drawing added.

Cl **33** *SC* **33.2.2** *P* **22** *L* **49** # 156

Dupuis, Joe — Hubbell

Comment Type **TR** *Comment Status* **X** *4P*

a) It is out of scope of the standard to limit implementations.
b) There are products in the market that already use the 2 x 2P implementation.
c) There is a market need for >30W.

SuggestedRemedy

Delete "While a PSE may be capable of both
Alternative A and Alternative B, PSEs shall not operate both Alternative A and Alternative B on the same
link segment simultaneously."

Proposed Response *Response Status* **W**

see 151, 100, 166 identical "out of scope of the standard to limit implementations."
argument. The job of a standard is to limit implementations to ensure interoperability.
Everything is a compromise.
Products in the market don't define market need nor do they ensure the need to enable in a standard.

Cl **33** *SC* **2.2** *P* **22** *L* **50** # 151

Pincu, David — Microsemi Inc.

Comment Type **TR** *Comment Status* **D** *4P*

The standard should not preclude implementations that are using both alternative A and B due to the following reasons:

a) It is out of scope of the standard to limit implementations.

b) There are products in the market that are already utilizing the 2 x 2P topology.

c) There is a considerably large market for higher power then 25-30W at the PD.

d) we need to support installations where a 4 pair cable supports two PDs where each one of them is connected to a 2P system. This arrangement is allowed by the cabling standards and exists in many locations .The 4 pair cable is connected to two outlets each outlet connected to two pairs and supporting a different PD.The current text precludes using this arrangement .

SuggestedRemedy

Change from:

"A PSE shall implement Alternative A or Alternative B, or both, provided the PSE meets the constraints of 33.2.3. Implementers are free to implement either alternative or both. While a PSE may be capable of both Alternative A and Alternative B, PSEs shall not operate both Alternative A and Alternative B on the same link segment simultaneously."

To:

"A PSE shall implement Alternative A or Alternative B, or both, provided the PSE meets the constraints of 33.2.3. Implementers are free to implement either alternative or both."

In addition in 33.3.1 page 33 line 42 delete "note allowed by" and replace with "out of scope of"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

a) It is out of scope of the standard to limit implementations. - The job of a standard is to limit implementations to ensure interoperability so limiting implementations is not out of scope for the standard - it IS the only job of the standard.

b) There are products in the market that are already utilizing the 2 x 2P topology. - That is not justification for a standard.

c) There is a considerably large market for higher power then 25-30W at the PD. - Show the market research and report the market size. Let the TF decide what defines a large market.

d) we need to support installations where a 4 pair cable supports two PDs where each one of them is connected to a 2P system. This arrangement is allowed by the cabling standards and exists in many locations .The 4 pair cable is connected to two outlets each outlet connected to two pairs and supporting a different PD.The current text precludes using this arrangement . - It is disallowed by the power section of 802.3 (Clause 33), need to check the validity under the rest of 802.3. I'm pretty sure Geoff always points out that while people do it, it is expressly not allowed under 802.3. Need to verify with Geoff.

Cl **33** *SC* **2.2** *P* **22** *L* **50** # 166

Feldman, Daniel Microsemi

Comment Type **TR** *Comment Status* **X** *4P*

The text precludes powering a port using alternatives A and B at the same time. This has several problems.
a) Limits implementations that both make sense, create no harm and are already found in the market for both IEEE802.11n and IEEE802.16 applications
b) As seen by products in the market, as long as the power sharing is performed at the load, there is no need to specify anything on the standard, and even IEEE802.3af endspans and midspans can power 4-pairs PD's that requrie up to 26W today.
c) It is an economically feasible solution to reach power levels of 30W to 60W, as shownb in several presentations.
d) It is technically feasible as shown by the same presentations and by the PD's in the field..
e) There is a huge market for higher power then 30W over 2P, including IEEE802.16 Base Stations, Thin Clients, FTTx ONT's and Notebooks.
f) The cost of a 4-pairs solution is so reasonable that there are even IEEE802.11n Access Points in the market today (e.g. Trapeze Networks) that preferred to use 4-pairs for 20W applications, instead of using 2-pairs high current, since the customers infrastructure is preserved and thes e access points can be powered by existing Midsspans and switches.
g) Using 4-pairs can be a way to reduce heat dissipation on the cable for outdoors applciations. 4-pairs in general is greener than 2-pairs, as the power wasted at the cable is much smaller.
h) 4-pairs fully utilizaes the cabling infrastructure, diminishing the chances we will have to create a new task force in another 2-3 years to support more power.

SuggestedRemedy

Change from:
"A PSE shall implement Alternative A or Alternative B, or both, provided the PSE meets the constraints of 33.2.3. Implementers are free to implement either alternative or both. While a PSE may be capable of both Alternative A and Alternative B, PSEs shall not operate both Alternative A and Alternative B on the same link segment simultaneously."

To:
"A PSE shall implement Alternative A or Alternative B, or both, provided the PSE meets the constraints of 33.2.3. Implementers are free to implement either alternative or both."

In addition in 33.3.1 page 33 line 42 delete "note allowed by" and replace with "out of scope of"

Proposed Response *Response Status* **W**

see 151, 100 - all redundant comments

Cl **33** *SC* **2.3** *P* **23** *L* **17** # 108

Darshan, Yair — Microsemi Corporation

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

Draft 1.0:
The text that was deleted is correct and helpful.

SuggestedRemedy

Restore the deleted text.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

If I recall the resolution correctly, this is succinctly stated in the state diagram section in 802.3. Therefore we decided to remove it.

Cl **33** *SC* **2.3** *P* **23** *L* **20** # 183

Diab, Wael — Broadcom

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

As defined, the same PSE cannot perform all the state machines listed in the figures simultaneously.

SuggestedRemedy

Either:
- Retain the original motivation for the state diagrams, which was to describe the high level behaviour as seen externally, by leaving the classification state as do_classification with the details defined in subsequent sections

OR

- Change the text to reflect the different combinations. Specifically, isert a copy of the table from diab_2_1007.pdf to precede this section and go through the various combinations and state diagrams that have to be implemented

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.3.3** *P* **24** *L* **15** # 226

Law, David — 3Com

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

Table 33-5, item 5 IInrush defines three different parameters:

[1] The minimum current the PSE shall supply (IInrush min). This is the minimum point at which the PSE can current limit and ensures a PD that is in excess of 180uF will be supplied with a minimum 400mA - the maximum a PD is allowed to draw (see 33-12, item 3, IInrush max)
[2] The maximum current the PSE is permitted to supply (IInrush max). This is the maximum value at which the PSE is permitted to supply and therefore is the maximum point at which a PSE must current limit when connected to a PD that is less than 180uF and therefore does not current limit.
[3] The range in between which a threshold has to be selected to define the threshold at which the timer ILIM runs (see Figure 33-7, I > IInrush). If this condition exists for more than 50 to 75ms the power has to be removed.

It is therefore permissible to set the current limit at 410mA as it is between the ranges set by [1] and [2] above yet set the TLIM threshold at 420mA. TLIM would therefore never trigger. In a sensible implementation one threshold will be selected and when current limiting TLIM will be running but there is nothing that requires this.

In addition subclause 33.2.3.3 defines constants but IInrush is a range, the constant in the IInrush threshold selected from that range.

SuggestedRemedy

[1] Change 'IInrush' to 'IInrush_threshold' in figure 33-7 and subclause 33.2.3.3.

[2] Change 'Current during inrush period of startup (see Table 33–5)' to read 'Startup inrush current limit (see Table 33–5)'.

Proposed Response *Response Status* **O**

Cl **33** *SC* **2.3.4** *P* **24** *L* **18** # 121

Schindler, Fred — Cisco Systems

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

To aid the development of the specification the IEEE 802.3at task force should agree to focus on text and tables before refining state diagrams.

SuggestedRemedy

Comments to state diagrams should not be preclude but the text should be established first and the state diagrams can be developed.

Proposed Response *Response Status* **O**

Cl **33** *SC* **2.3.4** *P* **24** *L* **19** # 96

Darshan, Yair — Microsemi Corporation

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

Draft 1.0:

We had allowed the PSE to turn power off if Vport is out of operating range per 33.2.8.1.
Therefore the state diagram in figures 33-6 and 33-7a should reflect is as well.

The way to do it is to create new variable which will be optional.
When the conditions of this variable are met, the PSE will remove power at any t<TLIM_MIN.

SuggestedRemedy

Remedy steps:
1) Add new variable option_vport_lim to 33.2.3.4. It will be an optional variable:

"option_vport_lim
This variable is indicating If PSE port voltage is out of operating range during normal operating mode.
Values:
False: Vport is within the Vport normal operating range as defined by table 33-5.
True: Vport is above or below normal Vport operating range as defined by table 33-5."

2) Change state diagram (figure 33-6 and 33-7a) per the attached drawing by changing the inputs to ERROR_DELAY_SHORT state coming from POWER_ON state, from:
tlim_timer_done

to:
Tlim_timer_done + !tlim_timer_done*option_vport_lim*power_applied)

Effect on legacy equipment: None since the variable is optional.

Proposed Response *Response Status* **O**

Cl **33** *SC* **2.3.4** *P* **24** *L* **20** # 184

Diab, Wael — Broadcom

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

Please remove the dll_comm_established from this state machine. This should be taken care of by the classification sections. The physical layer classification simply have to initiate the ednvironment for the DLL to start. Behaviour once the DLL starts can then be defined in the DLL machine.

SuggestedRemedy

Please remove the dll_comm_established from this state machine. The functionality associated with this can be addressed by the classification sections as we did in 802.3-2005.

Proposed Response *Response Status* **O**

Cl **33** *SC* **2.3.4** *P* **25** *L* **15** # 237

Stanford, Clay — Linear Technology

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

Talks about optional classification. This is a hold over from .af.

Just remove "optional".

Also applies to line 21.

SuggestedRemedy

Remove word "optional" from line 15.
Change line 21 from "optionally classifed it" to "classify it if applicable"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **2.3.4** *P* **25** *L* **25** # 265
Stanford, Clay Linear Technology

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

Parameter Trise has been eliminated.

Remove references to Trise.

SuggestedRemedy

IS:
c....ompleted the ramp of power per Trise of Table 33-5 and is operating...

SHOULD BE:
c....ompleted the ramp of power and is operating...

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

IS:
completed the ramp of power per Trise of Table 33-5 and is operating...

SHOULD BE:
completed the ramp of power and is operating…

Cl **33** *SC* **2.3.4** *P* **25** *L* **30** # 238
Stanford, Clay Linear Technology

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

Variable pse_available_power needs to be expanded to cover both Type 1 and Type 2 PSEs.

Follow style of page 27, line 35, creating pse_available_power2.

SuggestedRemedy

Add new variable pse_availablepower2

pse_available_power2
This variable indicates the highest power PD Class that could be supported. The value is determined in an implementation-specific manner.
Values: 0: Class 1
1: Class 2
2: Class 0, Class 3
3: Class 4

SHOULD BE:

Proposed Response *Response Status* **O**

Cl **33** *SC* **2.3.4** *P* **25** *L* **45** # 239
Stanford, Clay Linear Technology

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

I think variable pse_skips_event3 can be deleted.

SuggestedRemedy

Delete pse_skips_event3 variable and description.

Proposed Response *Response Status* **O**

Cl **33** *SC* **2.3.7** *P* **28** *L* **1** # 240
Stanford, Clay Linear Technology

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

I do not believe anything was changed in the Type 1 PSE state diagram besides the title? Remove the "Replace Figure 33-6" text.

SuggestedRemedy

Remove the "Replace Figure 33-6" text.

Proposed Response *Response Status* **O**

Cl **33** *SC* **2.3.7** *P* **28** *L* **1** # 2
LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **D** *ez*

The Type 2 state diagrams should more logically appear before the common PSE monitor state diagram.

SuggestedRemedy

Move Figures 33-7a, -7b, and -7c in front of Figure 33-7.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **2.3.7** *P* **28** *L* **1** # 172

Diab, Wael Broadcom

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

The editorial instructions need to be clearer. I believe the intent is to say please replace Fig 33-6 with the following figure. It could be misunderstood that the figure below needs to be replaced.

SuggestedRemedy

Please append the following to the instruction: "with the following figure"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **Figure 33-6** *P* **28** *L* **54** # 185

Diab, Wael Broadcom

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

The name of the figure is inconsistant with the convention we voted on at the last meeting (diab_2_1007.pdf). Specifically, this diagram shows a PSE that has one event classification. It has nothing to do with the Type.

SuggestedRemedy

Please remame the figure to PSE Implementing One Event Classification State Diagram

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **33.2.3.7** *P* **29** *L* **16** # 225

Law, David 3Com

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

Need to define that 'I' used in Figure 33-7 is in fact Iport. This is confirmed in subclause 33.2.8.6 that states that 'If IPort in Table 33-5 exceeds ICUT for longer than Tovld.

SuggestedRemedy

Either:

Add the following to subclause 33.2.3.4:

I
A variable indicating the value of the current being sourced from the PI (IPort).

Or:

Add the following to subclause 33.2.3.4:

IPort
Output current (see 33.2.8.6)

Change I to read IPort is all instances in Figure 33-7.

Add a definition of IPort to 33.2.8.6.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33-7** *P* **29** *L* **20** # 109

Darshan, Yair — Microsemi Corporation

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

Draft 1:
1. Figur 33-7 specifying the behavior of startup mode in addition to overload, short and MPS.
2. The behavior of short and startup are different in many aspects while it was similar in terms of ILIM and TLIM for type 1 legacy PSE.
Now we have to separate the behavioral state diagram to reflect current changes in type 1 and type 2 PSE.
We have to specify Tinrush, Iinrush for startup and ILIM/TLIM for short circuit.
I believe that this differentiation will help to make clearer standards.

SuggestedRemedy

Steps:
1. Replace figure 33-7 with the attached modification.
Changes are: Startup and short circuit behavior has separate drawing and the same behavior of the old drawing.
1.1 Add to 33.2.3.5:
"tinrush_timer
A timer used to monitor the duration of the inrush condition, See Tinrush in 33-5."
2. Update table 33-5 accordingly.
Add item 5a to table 33-5: Tinrush min=50msec, Tinrush_max=75msec (as was before with TLIM). Add to its "additional information" column "see 33.2.8.5"
3. In 33.2.8.5 add:
"a) for minimum of Tinrush. (The deletion of it was an error. we decided that startup in type 2 is similar to legacy PSE!).

Proposed Response *Response Status* **O**

attached figure is "Updated figure 33-7.pdf"

Cl **33** *SC* **2.3.7** *P* **30** *L* **1** # 241

Stanford, Clay — Linear Technology

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

I submit redlines the the state diagrams.

SuggestedRemedy

Implement redlines.

Proposed Response *Response Status* **O**

comment editor did not receive redlines drawings.

Cl **33** *SC* **Figure 33-7a** *P* **30** *L* **54** # 186

Diab, Wael — Broadcom

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

Figure 33-7a is really not necessary. I think that Figure 33-6 is a behavioral machine. Meaning that the details of classification can be described in the relevant physical classification section (one event or two event) followed by DLL if appropriate.

SuggestedRemedy

Please delete Figure 33-7a and retain do_classification.

Proposed Response *Response Status* **O**

Cl **33** *SC* **Figures 33-7b and 7c** *P* **31** *L* # 189

Diab, Wael — Broadcom

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

Please move diagrams 33-7b and 33-7c to the appropriate classification sections. The state machine can remain a high level behavioural diagram

SuggestedRemedy

Please move diagrams 33-7b and 33-7c to the appropriate classification sections.

Proposed Response *Response Status* **W**

but 33-7b and 33-7c are state diagrams and this is the state diagram section of 33.2. If we move them are you suggesting we no longer call them state diagrams?
see 186 which requests to delete 33-7a.

Cl **33** *SC* **Figure 33-7b** *P* **31** *L* **26** # 187

Diab, Wael — Broadcom

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

The name of the figure is inconsistant with the convention we voted on at the last meeting (diab_2_1007.pdf). Specifically, this diagram shows a DLL which can be used in a Type 1 as well. It has nothing to do with the Type.

SuggestedRemedy

Please remame the figure to PSE Implementing DLL Classification State Diagram

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **Figure 33-7c** *P* **32** *L* **40** # 188

Diab, Wael — Broadcom

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

The name of the figure is inconsistant with the convention we voted on at the last meeting (diab_2_1007.pdf). Specifically, this diagram shows a PSE that is doing two event classification. It has nothing to do with the Type.

SuggestedRemedy

Please remame the figure to PSE Implementing Two Event Classification State Diagram

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **2.5** *P* **33** *L* **5** # 13

LANDRY, MATTHEW — SILICON LABS

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

A PSE performing detection should be able to provide two characteristics.

(1) Probing into a short circuit won't destroy the PSE or the source of the short.

(2) Two PSEs probing the same link segment should not result in a 25kohm differential impedance.

The probing voltage (Vvalid and Voc) and short circuit current limit defined in Table 33-2 accomplish (1). A simple shall statement can accomplish (2).

Instead we have some schematics (Figs 33-8 and 33-9) and a normative statement requiring conformance to them. This sure sounds like mandating an implementation -- and unnecessarily at that.

SuggestedRemedy

Strike Figs 33-8 and 33-9 or add a NOTE mentioning that they are informative only.

Strike Thevenin shall statement on line 45.

Add the following shall: A PSE shall present a non-valid signature as defined in Table 33-9 in all detection states.

Note that current PSEs conforming to the Thevenin circuits currently mandated will still satisfy this new shall.

Proposed Response *Response Status* **O**

Cl **33** *SC* **2.5.1** *P* **33** *L* **51** # 124

Schindler, Fred — Cisco Systems

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

The existing section on PD detection requires specific design requirements that are not necessary to ensure interoperability. Other detection methods have been disclosed:
http://www.ieee802.org/3/poep_study/public/sep05/naegeli_1_0905.pdf
The IEEE specification should ensure requirements for interoperability are in place.

This comment also affects text in section 33.3.3, p54, L18.

SuggestedRemedy

Reference the PD model shown in figure 33-10, and require that the PSE detect values of Rpd_d for all permissible values of Cpd_d as specified in table 33-2.

Remove the text requiring two values but continue to provide guidance for designs that use the two probe method.

Proposed Response *Response Status* **O**

Cl **33** *SC* **2.7** *P* **35** *L* **29** # 242

Stanford, Clay — Linear Technology

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

We created a very good table to help define PSE and PD permutations. We need to define "Type 1" and "Type 2" PSEs.

SuggestedRemedy

Re-institute 33.2.2a PSE type definitions with the following text:

PSEs may support 2 power levels.
Type 1 PSEs support PSE output power levels of 15.4W.
Type 2 PSEs support PSE output power levels of Icable*Vport_min

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Definitions are correctly located in 1.4, see page 13, lines 11 - 14 of D1.0.

Cl **33** *SC* **2.7** *P* **35** *L* **32** # 190

Diab, Wael — Broadcom

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

Table 33-2a does not have any introductory text associated with it.

SuggestedRemedy

Please add the following sentence prior to the Table:

"An 802.3at PSE or a PD implementing classification shall meet one of the permutaiuons lsted in Table 33-2a"

Proposed Response *Response Status* **O**

see 159

Cl **33** *SC* **2.7** *P* **35** *L* **32** # 191

Diab, Wael — Broadcom

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

Table 33-2a does not accurately reflect the motion and text we adopted in October. The motion asked for incorporating all the text in diab_2_1007.pdf. This includes the footnotes.

SuggestedRemedy

Please include the footnotes to the table

Proposed Response *Response Status* **O**

see 62

Cl **33** *SC* **2.7** *P* **35** *L* **32** # 62

Vetteth, Anoop — Cisco

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

Figure 33-2a is missing the footnote for 1-Event classification as mentioned in the document diab_2_1007.pdf

SuggestedRemedy

Add the footnote:
802.3-2005 implementation will meet this

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Need to add appropriate text to comment response as voted in last time.

Cl **33** *SC* **2.7** *P* **35** *L* **32** # 159

Jones, Chad — Cisco

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

Table 33-2a should follow the PSE/PD classification text, not preceed it.

SuggestedRemedy

Move it below the text or to the appropriate place within the 33.2.7 text.

Proposed Response *Response Status* **O**

see 190

Cl **33** *SC* **2.7** *P* **36** *L* # 192

Diab, Wael — Broadcom

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

Section 33.2.7 does not accurately reflect the decisions we adopted in October. Specifically the motion relating to diab_2_1007.pdf, comment 225 and 161.

Moreover, not every case in the table is described in the text. For instance, the case of a Type 2 PSE with 802.3-2005 compaitble one event classification and DLL is not covered. The failed motion at the end of the interim session seems to have been inadvertantly implemented as well.

SuggestedRemedy

Please rewrite this section in accordance with the motion relating to diab_2_1007.pdf, comment 225 and 161 as agreed to in October.

Proposed Response *Response Status* **O**

see 39
this might ask for more than resolved by 39

Cl **33** *SC* **2.7** *P* **36** *L* **16** # 125

Schindler, Fred — Cisco Systems

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

The text: "…a Type 1 PSE may optionally classify a PD…" is overridden by text in 33.2.7.2: p37, L37, "The Type 1 PSE shall provide to the PI Vclass …" The intent to make a Type 1 PSE have optional classification has not been achieved.

SuggestedRemedy

Modify the text at p37, L37: "When classification is implemented, the Type 1 PSE shall …."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **2.7** *P* **36** *L* **2** # 160

Jones, Chad Cisco

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

This is the only appearance of Mutual Identification in the document. We need to inform the reader that mutual ID is the mechanism that allows a PD to differentiate Type 1 PSEs from Type 2 PSEs.

SuggestedRemedy

Add the sentence "Mutual Identification is the mechanism that allows a PD to differentiate Type 1 PSEs from Type 2 PSEs." as the third sentence in the first paragraph of 33.2.7

Proposed Response *Response Status* **O**

Cl **33** *SC* **2.7** *P* **36** *L* **22** # 39

LANDRY, MATTHEW SILICON LABS

Comment Type **TR** *Comment Status* **D** *class motion*

Currently says:
Subsequent to successful detection, all Type2 PSEs shall perform classification. A Midspan Type2 PSE shall perform classification using 2-Event Physical Layer classification and may optionally perform Data Link Layer classification. An Endpoint Type2 PSE shall perform classification using either 2-Event Physical Layer classification or Data Link Layer classification.

This does not agree with the table, which allows a Type2 PSE to do 2-Event, 2-Event+DLL, or 1-Event+DLL.

SuggestedRemedy

Change to:

Subsequent to successful detection, all Type2 PSEs shall perform classification. A Type2 PSE shall perform classification using at least one of the following: 2-Event Physical Layer classification; 2-Event Physical Layer classification and Data Link Layer classification; or 1-Event Physical Layer classification and Data Link Layer classifcation.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Remedy is unnecessarily verbose. The point is to show that DLL is not optional for a Type 2 PSE that does not implement 2-Event PL.

Recommend to change the text to:
Subsequent to successful detection, all Type2 PSEs shall perform classification. A Type2 PSE shall perform classification using at least one of the following: 2-Event Physical Layer classification or 1-Event Physical Layer classification and Data Link Layer classification.

Cl **33** *SC* **2.7** *P* **36** *L* **22** # 64

Vetteth, Anoop Cisco

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

There is no reason to distinguish between Midspans and Endspans here. Table 33-2a speaks only about PSEs in general.

SuggestedRemedy

Reflect the table 33-2a in the text

Proposed Response *Response Status* **O**

Cl **33** *SC* **2.7** *P* **36** *L* **24** # 148

Beia, Christian STMicroelectronics

Comment Type **ER** *Comment Status* **D** *class motion*

An Endpoint Type 2 PSE can also perform 1-event Phisical Layer Classification, and then DLL. It's better to refer to fig Table 33-2a (permutation) in this section.

SuggestedRemedy

Modify the sentence:
"An Endpoint Type 2 PSE shall perform classification using either 2-Event Physical Layer classification or Data Link Layer classification."
With
"An Endpoint Type 2 PSE shall perform classification using one of the permutations allowed in Table 33-2a"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

see 39

Cl **33** *SC* **2.7** *P* **36** *L* **24** # 63

Vetteth, Anoop Cisco

Comment Type **TR** *Comment Status* **D** *class motion*

Text implements a motion that failed

SuggestedRemedy

All type 2 PSEs shall perform Physical Layer Classification. Type 2 PSEs that do not perform Data Link Layer classification shall perform 2-Event Physical layer Classification

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

See 39

Cl **33** *SC* **33.2.7** *P* **36** *L* **24** # 271

Law, David 3Com

Comment Type **TR** *Comment Status* **D** *class motion*

The text 'An Endpoint Type 2 PSE shall perform classification using either 2-Event Physical Layer classification or Data Link Layer classification.' is not correct as the motion to use this approach failed. See also Table 33-2a.

SuggestedRemedy

Change the text to read 'An Endpoint Type 2 PSE shall perform classification using either 1-Event or 2-Event Physical Layer classification.'

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

see 39

Cl **33** *SC* **2.7** *P* **36** *L* **24** # 154

Sanita', Gianluca Nokia Siemens Networ

Comment Type **E** *Comment Status* **D** *class motion*

During Richfield meeting we vote against the possibility to skip Physical Layer 1-Event at the PSE side but the text says:

"An Endpoint Type 2 PSE shall perform classification using either 2-Event Physical layer classification or Data Link layer classification".

Moreover this statement is in contrast with table 33-2a where no Type 2 0-Event PSE is defined.

SuggestedRemedy

Change text to:
"An Endpoint Type 2 PSE shall perform classification using one of the following methods:
1) 2-Event Physical Layer classification
2) 2-Event Physical Layer classification and Data Link Layer classification
3) 1-Event Physical Layer classification and Data Link Layer classification

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

see 39

Cl **33** *SC* **2.7** *P* **36** *L* **24** # 126

Schindler, Fred Cisco Systems

Comment Type **TR** *Comment Status* **D** *class motion*

The text: "An Endpoint Type 2 PSE shall perform classification using either 2-Event Physical Layer classification or Data Link Layer classification." Is incomplete.

SuggestedRemedy

Amend then end of this sentence: "…Physical Layer classification or Data Link Layer classification, or both."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

see 39

Cl **33** *SC* **2.7** *P* **36** *L* **24** # 101

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **D** *class motion*

Draft 1.0:
1. In the classification base line we agree that "PSE Type 2 detect and classify"
2. In Table 33-2a we have defined only PSEs with 1 event, 2 events vs combinations of L2 and we didn't allow Type 2 PSE with zero L1 events.
3. In motion done at the end of the October meeting we didn't allow PSE to skip L1 1st event even if it has L2.
And yet the text in page 36 line 24 says:
" An Endpoint Type 2 PSE shall perform classification using either 2-Event Physical Layer classification or Data Link Layer classification."
Which allow PSE type 2 to do 2 event classification or L2 while the only options we agreed so far are:
L2 + L1 1st class event or
L2 two class events or
L2 + L1 two class events.

It is not clear from the text that A Type 2 PSE must do at least Type 1 Physical Layer classification in order to read Class 4 PDs that are Type 2 PDs by definition.
Class 4 IS THE UNIQUE IDENTIFICATION MEANS as required by the 5 Criteria.
Therefore:
PSE Type 2 must do at least 1st finger Physical layer classification to read if it is Type 1 or Type 2.

SuggestedRemedy

Change line 24 from:
"An Endpoint Type 2 PSE shall perform classification using either 2-Event Physical Layer classification or Data Link Layer classification."

to:
"An Endpoint Type 2 PSE shall perform classification using either 2-Event Physical Layer classification or Data Link Layer classification and 1-Event Physical Layer classification or 2-Event Physical Layer classification and data Link Layer classification.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

see 39

Cl **33** *SC* **2.7** *P* **36** *L* **24** # 65

Vetteth, Anoop — Cisco

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

Type 2 PSEs are not required to do 2-Event Physical Layer Classification. They can do either 1-Event or 2-Event Physical layer classification as per table 33-2a.

SuggestedRemedy

Reflect contents of the table in the text. Add the following sentence:
Type-2 PSEs that perform 1-Event Classification shall assume that it is powering a type 1 PD until successful Data link Layer Classifiation is performed.

Proposed Response *Response Status* **O**

see 66. this text is there but 66 recommends removing it.
Also see 196, 272, 173

Cl **33** *SC* **2.7** *P* **36** *L* **27** # 127

Schindler, Fred — Cisco Systems

Comment Type **TR** *Comment Status* **D** *L1 adhoc*

The text:
"If a PSE successfully completes detection of a PD, but the PSE fails to complete classification of a PD, then a Type 1 PSE shall assign the PD to Class 0 and a Type 2 PSE shall assign the PD to class 4." imposes an unnecessary design requirement. This text also enables dump-Type 2 PDs that do not support DLL classification.

A system that does not provide a proper class is:
a) Experiencing a temporary fault that will rectify itself.
OR
b) Noncompliant.

A compliant Type-2 PD has not achieved mutual identification and will remain in type-1 power mode. Therefore, requiring class-4 power serves no legitimate purpose.

A PSE that classifies a PD and gets an invalid results is not probable because this occurs only when class current exceeds 51 mA.

SuggestedRemedy

Require PSEs that performs classification, to either repeat the detection and classification steps, or repeat the classification step, until legal responses are achieved.

Proposed Response *Response Status* **O**

defer to L1

Cl **33** *SC* **2.7.1** *P* **36** *L* **29** # 98

Darshan, Yair — Microsemi Corporation

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

Draft 1.0:
According to the:
1. Classification base line concept and
2. Associated motions and
3. Current text in 802.3 that define that the physical layer classification information is the maximum power that the PD will ever need.
the text should explicitly note that a PD that asks more power than advertised in L1 hardware classification is specifically not compliant.

The rational for this was to prevent interoperability issues when a Type 2 PD is connected to Endspan PSE and get service while if connected to Midspan it will not work due to the fact that Midspan cant support L2.
As a result we mandate PD type 2 to support both L1 and L2 classification and specify that hardware classification results are max. Power values.

SuggestedRemedy

Add the following text right after line 29 (or other location per editor decision):
"PD that asks more power (by using Data Link Layer classification than) than advertised in he physical layer classification is not compliant to this standard".

Other equivalent wording is welcomed.

Proposed Response *Response Status* **O**

redundant comment, see 87

Cl **33** *SC* **2.7.1** *P* **37** *L* **25** # 128

Schindler, Fred — Cisco Systems

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

Use a generic way to capture the PSE power minimums for classes 3 and 4.

SuggestedRemedy

Replace "15.4 W" and "Icable x Vportmin" with "Ptype." Define Ptype = Icable x Vportmin, where Icable is derived from the minimum cable class permitted for the PSE Type, and Vportmin is the minimum static voltage permitted for the PSE Type. The cable parameters can reference applicable standards and provide:
Type-1 is CAT-3 with Rw = 40 ohms, Icable = 350 mA
Type-2 is Class-D with Rw = 25 ohms, Icable = TBD.

Proposed Response *Response Status* **O**

Cl **33** *SC* **2.7.1** *P* **37** *L* **27** # 86

Darshan, Yair — Microsemi Corporation

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

Draft 1.0:
Table 33-3:
To prevent confusion: Vport_min is as defined in table 33-5 item

SuggestedRemedy

Add text "Vport_min as defined in Table 33-5 item 1."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Where, directly in table or as a note under table?

Cl **33** *SC* **2.7.1** *P* **37** *L* **32** # 87

Darshan, Yair — Microsemi Corporation

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

Add clarification that Data Link Layer takes precedence over physical layer classification only when system requires using lower power than advertised by the physical layer classification.

SuggestedRemedy

Replace
"NOTE-Data Link Layer classification takes precedence
over Physical Layer classification."

With:
"NOTE-Data Link Layer classification takes precedence
over Physical Layer classification only when system requires to use lower power than advertised by the physical layer classification."

Proposed Response *Response Status* **O**

see page 56, line 23: "The Physical Layer classification of the PD is the maximum power thatthe PD will draw across all input voltages and operational modes."
it is already stated.

Cl **33** *SC* **2.7.2** *P* **37** *L* **35** # 147

Beia, Christian STMicroelectronics

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

The title of the paragraph 33.2.7.2 refers to 1-event PL classification, but the body is about Type1 PSE classification.
The easiest way to fix this issue is to restore to the reference to Type1 PSEs, since the 1-event PL classification option for Type2 PSEs is discussed in paragraph 33.2.7.2a.

SuggestedRemedy

Change the title of paragraph 33.2.7.2 with the following:
33.2.7.2 Type1 PSE Phisical Layer classification

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The title of 33.2.7.2 is "PSE 1-Event Physical Layer classification" and that is what this section is about. The fact is that a PSE is a Type 1 if it only implements 1-event and can't be a type 2 until it completes DLL.

33.2.7.2a is PSE 2-Event Physical Layer calssification and either 48 or 49 add PSE to the title to make it more clear.

See 144

Cl **33** *SC* **2.7.2** *P* **37** *L* **36** # 47

Jetzt, John Avaya, Inc.

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

Suggest adding introductory sentence to this section (similar to the introductory suggestion for the next section [see subsequent comment])

SuggestedRemedy

"PSE 1-Event Physical Layer Classification consists of the application of Vclass and the measurement of Iclass."

Proposed Response *Response Status* **O**

see 48

Cl **33** *SC* **2.7.2** *P* **37** *L* **37** # 193

Diab, Wael Broadcom

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

Please delete the word Type 1. This describes PSE one event classification which is independent of Type as agreed to in October per the Table and motion relating to diab_2_1007.pdf.

SuggestedRemedy

Please delete the word Type 1.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

as stated in response to 147, a PSE that only implements 1-Event has to behave as a type 1 until it completes DLL. By definition it is a type 1 (according to the PD) at this point in the detect/class process.

Cl **33** *SC* **33.2.7.2** *P* **37** *L* **37** # 268

Law, David 3Com

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

1-Event and 2-Event Classification is orthogonal to the PSE Type, see Table 33-2a. In addition suggest that the first sentence here and in 33.2.7.2a should be reworded.

SuggestedRemedy

Change 'The Type 1 PSE shall provide to the PI VClass with a current limitation ..' to read 'To perform 1-Event classification the PSE shall apply a voltage VClass to the PI with a current limitation ..'.

On line 42 change 'The Type 1 PSE shall measure the resultant ..' to read 'The PSE shall measure the resultant ..'.

Similarly for 2-Event classification:

On line 50 change 'The Type 2 PSE shall provide to the PI VClass as defined ..' to read 'To perform 2-Event classification the PSE shall apply a voltage VClass to the PI as defined ..'.

Delete the words 'Type 2' from:
Page 37, line 51.
Page 38, line 22.
Page 38, line 25.

Also change 'The Type 2 Physical Layer PSE shall ..' to read 'The PSE shall ..'.

Proposed Response *Response Status* **O**

see 193

Cl **33** *SC* **2.7.2** *P* **37** *L* **42** # 194

Diab, Wael Broadcom

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

Please delete the word Type 1. This describes PSE one event classification which is independent of Type as agreed to in October per the Table and motion relating to diab_2_1007.pdf.

SuggestedRemedy

Please delete the word Type 1.

Proposed Response *Response Status* **O**

see 193

Cl **33** *SC* **2.7.2** *P* **37** *L* **43** # 164

Jones, Chad Cisco

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

"Measurement of IClass shall be taken after 1 ms to ignore initial transients." This statement will break AF compliant PDs. Referring to 802.3-2003, PDs aren't required to present a valid class signature for 5ms (section 33.3.5.8)and PSEs can't complete classification before 10ms (table 33-5, item 20). 1-Event classification has to be equivalent to 802.3af.
I don't recall when this was added or the problem it attempted to fix. This restriction can be made on Type 2 PDs but not on Type 1 PDs.

SuggestedRemedy

Strike the sentence.

Proposed Response *Response Status* **O**

see 243

Cl **33** *SC* **2.7.2** *P* **37** *L* **43** # 243

Stanford, Clay Linear Technology

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

The PSE is to wait either 6ms (2-event) or 10ms (1-event) before taking a Classificaton current reading. The text incorrectly says 1ms

Change the value.

See other comment suggesting aligning 2-event and 1-event timing.

SuggestedRemedy

IS:
Measurement of IClass shall be taken after 1 ms to ignore initial transients.

SHOULD BE:
Measurement of IClass shall be taken after 6 ms to ignore initial transients.

Proposed Response *Response Status* **O**

see 164

Cl **33** *SC* **2.7.2** *P* **37** *L* **44** # 195

Diab, Wael Broadcom

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

Please delete the word Type 1. This describes PSE one event classification which is independent of Type as agreed to in October per the Table and motion relating to diab_2_1007.pdf.

SuggestedRemedy

Please delete the word Type 1.

Proposed Response *Response Status* **O**

see 193

Cl **33** *SC* **2.7.2a** *P* **37** *L* **48** # 144

Beia, Christian STMicroelectronics

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

The title of the paragraph 33.2.7.2a refers to 2-event PL classification, but the body is about Type2 PSE classification.
In fact this paragraph deals with 1-event PL classification too (see lines 48-54, pg 38)

SuggestedRemedy

Change the title of paragraph 33.2.7.2a with the following:
33.2.7.2a Type2 PSE Phisical Layer classification

Proposed Response *Response Status* **O**

see 147

Cl **33** *SC* **2.7.2a** *P* **37** *L* **48** # 49

Jetzt, John Avaya, Inc.

Comment Type **E** *Comment Status* **D** *ez*

Add "PSE" to section title.

SuggestedRemedy

"33.2.7.2a PSE 2-Event Physical Layer classification"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **2.7.2a** *P* **37** *L* **49** # 48

Jetzt, John Avaya, Inc.

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

Suggest introductory sentence to this section.

SuggestedRemedy

"PSE 2-Event Physical Layer classification consists of the first class event, the first mark event, the second class event, and the second mark event."

Proposed Response *Response Status* **O**

see 47

Cl **33** *SC* **2.7.2a** *P* **37** *L* **50** # 169

Diab, Wael Broadcom

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

To be consistant with the style mentioned in my previous comment, please delete the word Type 2 here. This will not affect the content as the table rules out a type 1 PSE with 2 event but it does make the physical layer classification independent of type.

SuggestedRemedy

Please delete the word Type 2 throughout this section

Proposed Response *Response Status* **O**

also see 193

Cl **33** *SC* **2.7.2a** *P* **37** *L* **52** # 129

Schindler, Fred Cisco Systems

Comment Type **TR** *Comment Status* **D** *L1 adhoc*

The same settling requirements for Type-1 classification should be imposed on Type-2 first class, classification. A Type 1 PD requires 5 ms to provide a valid class current (table 33-12, item 9). This comment also applies to p38 L24.

SuggestedRemedy

Have the L1 ad hoc review and correct this section.

Proposed Response *Response Status* **O**

defer to L1

Cl **33** *SC* **2.7.2a** *P* **38** *L* **35** # 50

Jetzt, John Avaya, Inc.

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

Delete first appearance of "Physical Layer".

SuggestedRemedy

"The Type 2 PSE shall complete 2-Event Physical Layer classification ..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **2.7.2a** *P* **38** *L* **35** # 130

Schindler, Fred — Cisco Systems

Comment Type **ER** *Comment Status* **D** *L1 adhoc*

The text:
"… transition to the POWER_ON state without allowing the voltage at the PI to go below Vmark." Conflicts with text at L40: "… shall ensure the PI enters the Vreset range…" because Vmark > Vreset.

SuggestedRemedy

Have the L1 ad hoc provide text to correct this section.

Proposed Response *Response Status* **O**

defer to L1

Cl **33** *SC* **2.7.2a** *P* **38** *L* **40** # 102

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **D** *L1 adhoc*

Draft 1.0:

When PSE classify the PD after Icllas_LIM event it should get to Vreset for Treset prior to power the port.

In order to achieve this objective PD should consume some minimum current to allow PSE to reduce its port voltage due the capacitors in the channel.

SuggestedRemedy

The classification ad hoc to adress this issue if it is possible to implement i.e. to have I>>0 at 2.8V to 6.9 Volt range for Treset.

Proposed Response *Response Status* **O**

defer to L1

Cl **33** *SC* **2.7.2a** *P* **38** *L* **40** # 83

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **D** *L1 adhoc*

Draft 1.0:
If after Iclass_lim event the PSE classify the PD as class 4, why we need to be in Reset range?
It looks that the text "Subsequent to such classification, the PSE shall ensure that the voltage at the PI enters the VReset range for at least TReset min as defined in Table 33-4a prior to powering the port." is not required.

SuggestedRemedy

Option a:
Classification ad hoc to explain why we need it.
If we don't need it, to delete it.

Option b:
Change the text to read:
"If PSE decides not to complete two event classification due to any reason, or decides to ignor classification results, the PSE shall ensure that the voltage at the PI enters the VReset range for at least TReset min as defined in Table 33-4a prior to powering the port."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.2a** *P* **38** *L* **41** # 149

Beia, Christian — STMicroelectronics

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

If the measured Iclass is greater than Iclass_lim, the assigned class is Class4. There is no reason to reset the voltage at the PI in this case. Whithout this sentence, if the 2-event classification succeded, the PD will work correctly as class 4.
With a reset instead, the PD will work as a Type1 PD, wasting a lot of the allocated by the PSE.

SuggestedRemedy

Remove the sentence:
Subsequent to such classification, the PSE shall ensure that
the voltage at the PI enters the VReset range for at least TReset min as definied in Table 33–4a prior to powering the port.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

If the PD is drawing more than Iclass_lim, it is assumed to be a 'bad' PD and therefore should not be treated or enabled as a class 4 PD. Entering reset voltage disables dumb PDs as Schindler points out in 127.

Cl **33** *SC* **33.2.7.2a** *P* **38** *L* **48** # 272

Law, David 3Com

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

The text 'If the result of the first class event is Class 4, the PSE may omit the subsequent mark and class events only if the PSE implements Data Link Layer classification. In this case, the Type 2 PSE shall assume it is powering a Type 1 PD until successful Data Link Layer classification is performed.' should be deleted as it isn't correct anymore.

According to table 33-2a a Type 2 PSE can choose to do either 1-Event or 2-Event classification. If it chooses to do 1-Event classification it is mandatory that it supports DLL.

SuggestedRemedy

Delete this paragraph.

Proposed Response *Response Status* **O**

see 196.

Cl **33** *SC* **2.7.2a** *P* **38** *L* **48** # 196

Diab, Wael Broadcom

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

The 2-event phsical layer classification defines a two finger approach, I do not recall that we decided to omit any of the first two fingers. That is now achieved by the one event description.

SuggestedRemedy

Please remove the text associated with omitting any fingers, that is now achieved by the one event description.

Proposed Response *Response Status* **O**

The subtlety here is that 1-event has to = AF but 2-event stopping after 1 finger does not = AF because of the new 2-event timings, therefore it is not covered by 1-event.
The other question is do we want to allow 2-event to stop after 1 finger? In the case of class 0, 1, 2, 3 I think yes we do. This is covered by the paragraph at 52. Do we want to allow a PSE to skip the second finger if it implements DLL? Take a vote.

Cl **33** *SC* **2.7.2a** *P* **38** *L* **48** # 173

Diab, Wael Broadcom

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

As per comments 225 and 161, this text needs to be restructured so that we can write PICs around it. The way it stands, it says you shall implement this and you may then omit. This is hard to write text around. I believe that the editor is trying to describe a state machine.

SuggestedRemedy

Please replace this paragraph with a state machine

Proposed Response *Response Status* **O**

also see 196, 272

Cl **33** *SC* **2.7.2a** *P* **38** *L* **48** # 66

Vetteth, Anoop Cisco

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

Lines 48-54 is not part of any motion. Timing requirements for 1-Event Classification and the first finger of 2-Event Classification are different and should be part of a motion before it is adopted in the draft.

SuggestedRemedy

Delete lines 48-54.

Proposed Response *Response Status* **O**

see 65.
Also see 196, 272, 173

Cl **33** *SC* **2.7.2a** *P* **38** *L* **49** # 88

Darshan, Yair — Microsemi Corporation

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

Draft 1.0:
Lines 48-50 adress the folowing case:
For PSE type 2: If the result of the first class attempt is 4, the PSE may ommite the 2nd class attemp only if the PSE use L2.
In this case the PSE is required to assume that it is powering Type 1 PD.
This requirement is an error.
PD with class 4 is always PD class 4 or Type 2 PD.
PSE which detects class 4 in the 1st attempt should classify the PD as class 4.
Only the PD has the responsibility to consume <=12.95W until either 2 fingers or L2 is detected and established.
The PSE has no other responsibilities.
Class 4 is THE unique identification of the PD.

SuggestedRemedy

Draft 1.0:
Lines 48-50 address the following case:
For PSE type 2: If the result of the first class attempt is 4, the PSE may omit the 2nd class attempt only if the PSE use L2.
In this case the PSE is required to assume that it is powering Type 1 PD.
This requirement is an error.
PD with class 4 is always PD class 4 or Type 2 PD.
PSE which detects class 4 in the 1st attempt should classify the PD as class 4.
Only the PD has the responsibility to consume <=12.95W until either 2 fingers or L2 is detected and established.
The PSE has no other responsibilities.
Class 4 is THE unique identification of the PD.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

A PD that can successfully respond with two consecutive class 4 and is also able to respond to DLL is the unique identifier. A PSE is not required to check all of these to determine class 4 but it has to at least check 2-events of class four or 1-event of class 4 and DLL. A PSE that has not done 2-events has not determined it has a Type 2 PD yet and therefore must treat it as Type 1.

Cl **33** *SC* **2.7.2.a** *P* **39** *L* **1** # 84

Darshan, Yair — Microsemi Corporation

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

Draft 1.0:
This text contradicts other decision that requires that in case of bad classification results detected by Type 2 PSE, The PSE will classify the PD as class 4.
This should be the same here in this case.

SuggestedRemedy

Change from:
"If a Type 2 PSE observes mixed results, it shall return to the IDLE state"

To:
If a Type 2 PSE observes mixed results, it shall classify the PD as Class 4 PD i.e. Type 2 PD."

Proposed Response *Response Status* **W**

seems Fred had a similar but opposite comment, find and point to each other. Maybe 127?

Cl **33** *SC* **2.7.2a** *P* **39** *L* **30** # 267

Stanford, Clay — Linear Technology

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

Clarify Reset timing is only for 2-event classifiation and add timing parameter.

SuggestedRemedy

Table 33-4a Item 9

IS:
Classification Reset Timing|Treset|ms|TBD|TBD|blank

SHOULD BE:
Classification Reset Timing|Treset|ms|5|blank|blank

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **2.7.2A** *P* **39** *L* **5** # 244

Stanford, Clay — Linear Technology

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

Table 33-4a covers both Type 1 and Type 2 PSEs. Table title should not call out Type 2. Remove "Type 2".

SuggestedRemedy

IS:
Table 33-4a-Type 2 Physical Layer classification electrical requirements

SHOULD BE:
Table 33-4a-Physical Layer classification electrical requirements

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Should be:
Table 33-4a- 2-Event Physical Layer classification electrical requirements

---

Cl **33** *SC* **Table 33-5** *P* **40** *L* **11** # 197

Diab, Wael — Broadcom

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

The PSE Type column introduces inconsistencies with the nomenclature we adopted at the Octoer meeting. For example, the Type does not make sense when we are refering to classification parameters, these are one-finger or two finger.

SuggestedRemedy

Insert another colum that reads One or Two Finger Physical Classification. For parameters that are related to the classification fill in that column and leave the Type colum blank. And vice versa for the Type.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

1-Event or 2-Event

see 273.

Cl **33** *SC* **2.8** *P* **40** *L* **17** # 133

Schindler, Fred — Cisco Systems

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

Provide a definition for Vport that can be used throughout the document. This will avoid confusion.

SuggestedRemedy

Define Vport as the voltage present at the MDI.

Proposed Response *Response Status* **W**

33.2.8.1 has this sentence: "The voltage potential shall be measured between any conductor of one power pair and any conductor of the other power pair."
Is this not sufficient?

Cl **33** *SC* **2.8** *P* **40** *L* **23** # 134

Schindler, Fred — Cisco Systems

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

Consider using "k" or something other than "V" to convey that a constant is being used.

SuggestedRemedy

Suggest using "KTran_lo."

Proposed Response *Response Status* **O**

Cl **33** *SC* **2.8** *P* **40** *L* **3** # 8

LANDRY, MATTHEW — SILICON LABS

Comment Type **T** *Comment Status* **D** *ez*

Missing references to new state diagrams.

SuggestedRemedy

Add references to Figures 33-7a, -7b, and -7c.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **2.8** *P* **40** *L* **3** # 106

Darshan, Yair — Microsemi Corporation

Comment Type **T** *Comment Status* **D** *ez*

Draft 1.0:

PSE should conform also to figures 33-7a, 33-7b and 33-7c.

SuggestedRemedy

Change from:

"When the PSE provides power to the PI, it shall conform with Table 33–5, Figure 33–6, and Figure 33–7."

to:

When the PSE provides power to the PI, it shall conform with Table 33–5, Figure 33–6, and Figure 33–7, 33-7a, 33-7b and 33-7c."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE see 8

Cl **33** *SC* **2.8** *P* **40** *L* **35** # 81

Johnson, Peter — Sifos Technologies

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

Iport_max is shown with the value Icable as a MINIMUM required maximum port current. However, Icable is defined as 720 mA in 33.1.4, and 720 mA is the very top of the allowed current range in Figure 33-9a (formerly SOA curve). So it doesn't seem logical that Icable can be a MINIMUM value for anything including Iport_max for Type 2 PSE's.

SuggestedRemedy

Icable needs to be clearly defined as EITHER the maximum continous current (Iport) that can ever exist on a single pair OR if it is to be equated with 803.3af value of Iport_max (MIN) (=350 mA), then it cannot be considered the maximum continous current allowed on a pair as implied by Figure 33-9a.

Proposed Response *Response Status* **O**

Cl **33** *SC* **2.8** *P* **40** *L* **4** # 131

Schindler, Fred — Cisco Systems

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

Combine the two sentences added so that the required intent is conveyed within one sentence.

SuggestedRemedy

Use the sentence: "When a Type 2 PSE powers a Type 1 PD, the PSE shall meet the electrical requirements of a Type 1 PSE, and may choose to meet the electrical requirements of a Type 2 PSE for table 33-5 items 4, 8, and 10."

Proposed Response *Response Status* **O**

This is an editorial comment. Technically, what changes from the edit?
Propose to accept…

Cl **33** *SC* **2.8** *P* **41** *L* **15** # 97

Darshan, Yair — Microsemi Corporation

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

Draft 1.0:

Table 33-5 item 11.
1. 33.2.8.9 was deleted so it should be removed from item 11.
2. Figure 33-9a do not contain all necessary data for TLIM. Figures 33-12b and 33-12c are better.
3. Figure 33-9a contains error: The horizontal line should cross Icable*0.4/0.35 and not 0.72A.

SuggestedRemedy

1. Delete 33.2.8.9 from item 11 and replace it with 33.2.8.8.
2. Add figures 33-12b and figures 33-12c to item 11.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **2.8** *P* **41** *L* **19** # 264

Stanford, Clay Linear Technology

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

Enter values for turn on ramp rate and load capacitance

SuggestedRemedy

Table 33-5, item 12

IS: TBD

SHOULD BE:
Turn on ramp rate|blank|dV/dt|blank|10|1.2|With a minimum capacitive load of 0.05uF.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Table 33-5, item 12

Turn on ramp rate|blank|dV/dt|blank|10|1, 2|With a minimum capacitive load of 0.05 uF.

Cl **33** *SC* **2.8** *P* **41** *L* **37** # 273

Law, David 3Com

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

1-Event and 2-Event Classification is orthogonal to the PSE Type, see Table 33-2a.

SuggestedRemedy

Change the entries in the PSE Type column to read '1,2' and differentiate the two rows of item 20 as being 1-Event and 2-Event.

Proposed Response *Response Status* **O**

see 245

Cl **33** *SC* **2.8** *P* **41** *L* **38** # 245

Stanford, Clay Linear Technology

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

When the 2-event classification was created, it was desired to perform it quickly so the PSE miniumum timing was reduced from 10ms to 6ms. (The PD must be stable within 5ms.) There now is a discrepancey beteeen 1-event and 2-event classification in this minimum pulse period. It would be best to align the two timing numbers.

Also, Table 33-5 entry would make more sense moved to table 33-4a

SuggestedRemedy

IS:
Table 33-5, item 20
10mS minimum.

SHOULD BE:
6ms minimum.

Move entire line over to Table 33-4a.

Proposed Response *Response Status* **O**

the problem is you can't change 1-event timings. This is AF.

Cl **33** *SC* **2.8.1** *P* **41** *L* **52** # 246

Stanford, Clay — Linear Technology

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

The statement:

"A PSE in the POWER_ON state may remove power from the PI when the PI voltage no longer meets the VPort specification"

is very broad and doesn't reflect the intent. Add text to clarify.

SuggestedRemedy

IS:
A PSE in the POWER_ON state may remove power from the PI when the PI voltage no longer meets the VPort specification.

SHOULD BE: (CAPS INDICATE ADDITION)
A PSE in the POWER_ON state may remove power from the PI IF THE PI voltage no longer meets the VPort specification DUE TO EXCESSIVE PORT LOADING FROM A NON-COMPLIANT PD OR PORT FAULT CONDITION.

Proposed Response *Response Status* **O**

what is allowed by the present text that we want to prevent? Lacking specific examples, I'm inclined to reject.

Cl **33** *SC* **2.8** *P* **41** *L* **7** # 9

LANDRY, MATTHEW — SILICON LABS

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

ICUT is optional. ICUT min should be the maximum current the PD can draw at a given port voltage (PClass/VPort). It is.

To maintain the use of the TCUT timer, the maximum ICUT should be less than or equal to the current limit. This is almost true for Type 1. We have a TBD for Type 2.

We need to specify an ICUT max that meets the criteria above.

SuggestedRemedy

Change ICUT max to ILIM.

This will open up the ICUT space a little wider for Type 1 PSEs (e.g. if ILIM is 425mA, then ICUT could be 424mA), but will also properly let the SOA curve guide ICUT for all future PSEs.

Note that it does not break compliance of current PSEs, and still supports both current limited and energy limited PSEs.

Proposed Response *Response Status* **O**

Cl **33** *SC* **2.8.2** *P* **42** *L* **1** # 53

Vetteth, Anoop — Cisco

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

Sections 33.2.8.2 and 33.2.8.2a provide the same information and are independent of the PSE type

SuggestedRemedy

Combine both sections into one section that covers both type 1 and type 2 PSEs

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Delete 33.2.8.2a. Rename 33.2.8.2 to "Load regulation for PSEs"

Cl **33** *SC* **2.8.2a** *P* **42** *L* **12** # 132

Schindler, Fred — Cisco Systems

Comment Type **TR** *Comment Status* **D** *Vport adhoc*

The PD is restricted to a current slew rate of 15 mA/us maximum. A single PSE port can provide a 35 mA/us demand rate but multiple ports transitioning at this rate may be unrealistic.

SuggestedRemedy

Change PSE requirements in this section of "35 mA/us max." to "at least 15 mA/us."

Proposed Response *Response Status* **O**

defer to vport

Cl **33** *SC* **2.8.2B** *P* **42** *L* **17** # 247

Stanford, Clay — Linear Technology

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

Paragraph could be written more clearly to better express intent.

SuggestedRemedy

IS:
A Type 2 PSE shall maintain an output voltage no less than VTran_lo below VPort min for transient conditions lasting more than 30us and less than 250us.

Transients less than 30us in duration may cause the voltage at the PI to fall more than VTran_lo . The minimum PD input capacitance ensures the PD will operate for any input voltage transient lasting less than 30us. Transients lasting more than 250us shall meet the static VPort specification.

SHOULD BE:

Brief decaying voltage transients less than 30us in duration should not effect PD operation due to storage capacity present in the PD and as such are not limited.

For decaying voltage transients lasting 30 to 250us, a Type 2 PSE shall maintain an output voltage no less that VTran_low bleow Vport_min.

Transients lasting more than 250us shall meet the static VPort specification.

Proposed Response *Response Status* **O**

see 135

Cl **33** *SC* **2.8.2a** *P* **42** *L* **17** # 135

Schindler, Fred — Cisco Systems

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

The sentence structure does not convey the intent for PSE transient behavior and what action to take when a short circuit condition exists.

SuggestedRemedy

Modify the existing sentence to: "A Type 2 PSE shall maintain an output voltage of no less than VTran_lo below Vport min for transient conditions lasting more than 30 uS and less than 250 us, and meet the requirements of section 33.2.8.8.

Proposed Response *Response Status* **O**

comment recommends adding this:

"and meet the requirements of section 33.2.8.8"

to the end of the existing sentence.

See 247

Cl **33** *SC* **2.8.4** *P* **42** *L* **32** # 224

Law, David 3Com

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

Maybe I am missing something but to get to the value PClass used in subclause 33.2.8.4 it took multiple levels of indirection.

From subclause 33.2.8.4.
Goto Table 33-5.
Table 33-5, Item 14, minimum value is PClass and references 33.2.8.11a.
Goto 33.2.8.11a.
Subclause 33.2.8.11a states 'PClass is the class power defined in 33.2.7'
Goto 33.2.7.
Subclause 33.2.7 describes PSE classification of PDs, no definition of PClass to be found there. Happen to keep reading.
Goto 33.2.7.1.
Find Table 33-3 'Physical Layer power classifications'. It has what appears to be a list of power levels but doesn't actually mention the parameter PClass.
Finally subclause 33.2.7.2

SuggestedRemedy

I would suggest that the following changes be considered:

[1] Update Table 33-3 to make it clear it contains the PClass vales.
[2] Update references to 33.2.7 to be to 33.2.7.1 where they are in relation to PClass and the contents of Table 33-3.
[3] Update Table 33-5 item 4 to have a more direct reference to either subclause 33.2.7.1 or Table 33-3

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **2.8.4** *P* **42** *L* **35** # 137

Schindler, Fred Cisco Systems

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

The value for Ipeak is incorrect.

SuggestedRemedy

The correct value for Ipeak = (Vpse - SQRT(Vpse^2 - 4RchPpd_port_peak))/(2Rch).
More details can be found in a presentation that will be provided during the Atlanta Plenary meeting.

Proposed Response *Response Status* **O**

see 114

Cl **33** *SC* **2.8.4** *P* **42** *L* **38** # 227

Law, David 3Com

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

Please provide definitions for the variables used in this equation.

SuggestedRemedy

Suggest that this text be changed to read:

The PSE shall support an AC current of Ipeak minimum for 50 ms minimum and 5 % duty cycle minimum.

Ipeak = (400 / 350) × (PPort / VPort)

Where:

IPeak is the peak output current.
PPort is the minimum continuous output power (see Table 33-5, item 14).
VPort is the minimum static output voltage (see Table 33-5, item 1).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **2.8.4** *P* **42** *L* **38** # 114

Darshan, Yair — Microsemi Corporation

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

1. The editor was not authorized to make the changes in this clause due to the fact that the remedy suggested by the ad-hoc was not concluded and adopted.

2. In addition, the new text makes legacy PSE non compliant due to the fact that the peak power for type PSE is not function of (Pport/Vport)*(0.4/0.35) for class 1 and 2. It is correct only for class 0,3.

3. The peak current is already defined in Table 33-12 item 12 (Ed note: Item 4) and we don't need to define it again for the PSE due to the simple physical fact the PSE output current is equal to the PD input current..

SuggestedRemedy

Option 1: (Not recommended)
Restore the old text.

Option 2: (Recommended)

Replace the text in line 38 from:
"The PSE shall support the following AC current waveform parameters:
Ipeak = (400 / 350) [a] (PPort / VPort) minimum for 50 ms minimum and 5 % duty cycle minimum."

To:
"The PSE shall support the following the maximum peak current as defined by Table 33-12 item 4 for 50 ms minimum and 5 % duty cycle minimum."

Note to the group:
1. The peak current already defined in table 33-12 item 4. No need to repeat it again.
2. The peak current numbers should be defined in one place i.e. in the PD side due to the fact that it is defined by the load and the PSE has only to support it.
3. The peak current with option b remedy is function of (0.4/0.35)*Port/Vport only for Type 2 PD due to the fact that we don't have to take in account previous legacy definitions.
For type 1 class 1 and 2 PDs, the constant power model contains some margin from reasons that was explained in my presentation (that was not presented yet) which is located at the web site of the October 2007 meeting).
3. For class 0,3 the peak current is a constant and not a function of Vport.
(The average current was described as a function of Pport/Vport.)
Taking all this data in account, leads to the suggested remedy of option b.

Proposed Response *Response Status* **O**

see 137

Cl **33** *SC* **2.8.4** *P* **42** *L* **38** # 80

Johnson, Peter — Sifos Technologies

Comment Type **T** *Comment Status* **D** *Vport adhoc*

It is no longer clear that 33.2.8.4 requires Vport to fall into the valid Vport range during a transient load condition (Ipeak). Without this clarification, 3.2.8.4 could come into conflict with 33.2.8.1 which allows power to be removed when Vport drops below Vport_Min. Additionally, there is nothing in 33.2.8.2 (Vport Regulation) that assures a valid Vport level given Ipeak as defined in 33.2.8.4. Additionally, "transient current waveforms" or "peak current waveforms" may be a better term than "AC current waveforms" in line 38 since "AC" in the spec is generally associated with MPS technique rather than overload currents.

SuggestedRemedy

One solution: Title 3.2.8.4

PSE maximum continuous and peak output current in normal powering mode at or above minimum output voltage

Separately modify line 38 to use "...peak current waveform..."

Proposed Response *Response Status* **O**

defer to vport

Cl **33** *SC* **2.8.4** *P* **42** *L* **39** # 79

Johnson, Peter — Sifos Technologies

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

The formula as written is confusing and should be corrected to avoid breaking 802.3af specification where any PD is allowed to draw 400 mA for 50 msec.

SuggestedRemedy

Ipeak = (400 / 350) x (Port / Vport_Min) for 50 msec minimum and 5% duty cycle minimum.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The remedy recomends changing Vport to Vport_min in the formula.

Cl **33** *SC* **2.8.5** *P* **43** *L* **16** # 104

Darshan, Yair — Microsemi Corporation

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

Draft 1.0:
In many ocasions the normative text send the reader to see figures 33C.4 and 33C.6 which contains valuble data.
These drawings should be at the normative text as it was in early drafts of 802.3af and were moved to the informative section due to editing considerations.

SuggestedRemedy

Move figures 33C.4 and 33C.6 (after updating them per my previous comment) to the normative section at the location where they are mentioned for the first time.

Proposed Response *Response Status* **O**

opposite comment of Fred 138 which asks to delete reference to these figures

Cl **33** *SC* **2.8.6** *P* **43** *L* **20** # 248

Stanford, Clay — Linear Technology

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

Line 20 says PSE may remove power.
Line 40 dyas PSE shall remove power.

Define consistant operation.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE see 10

Cl **33** *SC* **2.8.5** *P* **43** *L* **23** # 136

Schindler, Fred — Cisco Systems

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

The text: "In a PSE that supports a classification function … may optionally be" provides a formula for ICUT. This ICUT formula is valid whether classification is performed or not.

SuggestedRemedy

Replace this text with: "In a PSE, the minimum value of ICUT may optionally be"

Proposed Response *Response Status* **O**

Cl **33** *SC* **2.8.6** *P* **43** *L* **30** # 56

Vetteth, Anoop — Cisco

Comment Type **TR** *Comment Status* **D** *Vport adhoc*

the denominator of the equation should be Vport and not Vportmin. The minimum value of Icut should be equal to the value of Iport_max as defined in 33.2.8.4

SuggestedRemedy

Change the denominator of the equation to Vport

Proposed Response *Response Status* **O**

defer to Vport

Cl **33** *SC* **2.8.6** *P* **43** *L* **31** # 249

Stanford, Clay — Linear Technology

Comment Type **T** *Comment Status* **D** *Vport adhoc*

Icut is being re-defined to allow current to be limited to PD power rating.

In equation, I think the intent is for the PSE to use the actual port voltage to calculate the allowed current.

Therefore, Vport_min should be Vport-operation, or Vport-actual.

SuggestedRemedy

Proposed Response *Response Status* **O**

see 56

Cl **33** *SC* **2.8.7** *P* **43** *L* **40** # 10

LANDRY, MATTHEW SILICON LABS

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

The ICUT function is optional. 33.2.8.6 even uses 'may' instead of 'shall.' But, the Tovld description still has a normative 'shall.'

SuggestedRemedy

Change from:
After time duration of Tovld as specified in Table 33–5, the PSE shall remove power from the PI.

To:
After time duration of Tovld as specified in Table 33–5, the PSE may remove power from the PI.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **2.8.7** *P* **43** *L* **40** # 110

Darshan, Yair Microsemi Corporation

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

Replace "shall" with "may" to match line 20

SuggestedRemedy

Replace "shall" with "may".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE see 10

Cl **33** *SC* **2.9** *P* **43** *L* **48** # 6

LANDRY, MATTHEW SILICON LABS

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

The statement about a Type 1 PSE treating a PD as Class 0 is neither normative nor very informative.

SuggestedRemedy

Remove the sentence. It adds no new information.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

It sentence implies that the default class for a PD is 0 if a PSE does not perform classification. Unless this is stated elsewhere it has to stay. In fact it had better be normative elsewhere.

Cl **33** *SC* **2.8.8** *P* **43** *L* **54** # 250

Stanford, Clay Linear Technology

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

It isn't quite clear what the author was trying to say.

Rewrite by removing items a and b.

SuggestedRemedy

IS:
If a short circuit condition is detected, power removal from the PI shall begin within TLIM as specified in Table 33–5 under the following conditions:
a) Max value of the PI current during short circuit condition.
b) Max value applies for any DC input voltage up to the maximum voltage as specified in item 1 of Table 33–5.

SHOULD BE:
If a short circuit condition is detected, power removal from the PI shall begin within TLIM as specified in Table 33–5.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

agreed that the text isn't clear. I assume there is information ttying to be conveyed with items a) & b). Suggest to rewrite a) & b) for clarity.

Cl **33** *SC* **2.8.5** *P* **43** *L* **8** # 89

Darshan, Yair Microsemi Corporation

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

Deletion of item a) is wrong.
Startup must have 50msec minimum time due to our decision that Type 2 PSE use the same parameters used for legacy PSE.
See my other comment that address this issue as well by replacing the 50msec number with Tinrush. Tinrush will be defined in table 33-5 in separate line.

SuggestedRemedy

Add:
"a) For duration of Tinrush as specified in table 33-5 item 5a."

Proposed Response *Response Status* **O**

see 92, 109

Cl **33** *SC* **2.8.8** *P* **44** *L* **27** # 139

Schindler, Fred — Cisco Systems

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

Replace 720 mA on Figure 33-9a with 400/350xIcable.

SuggestedRemedy

Replace 720 mA on Figure 33-9a with 400/350xIcable.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE see 57

Cl **33** *SC* **Figure 33-9a** *P* **44** *L* **27** # 99

Darshan, Yair — Microsemi Corporation

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

We voted on Icable*0.4/0.35 and not 720mA at the horizontal part of the curve after 75msec.

SuggestedRemedy

Change from 720mA to Icable*0.4/0.35 from T=75msec to infinity.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Identical to 103 from same commenter.

OBE See 57

Cl **33** *SC* **2.8.8** *P* **44** *L* **27** # 103

Darshan, Yair — Microsemi Corporation

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

Draft 1.0:

Figure 33-9a contains error.
The horizontal line starts at 75msec should be aligned to Icable*0.4/0.35 as defined by the base line and as defined by figures 33-12b and 33-12c.

SuggestedRemedy

Change the horizontal line that starts at 75msec to Icable*0.4/0.35

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE see 57

Cl **33** *SC* **figure 33-9a** *P* **44** *L* **39** # 90

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **D** *Vport adhoc*

Draft 1.0:

The title of figure 33-9a is "PI operating current template"
It is only defines the maximum current.
In addition it contains error: The current after 75msec is Icable*0.4/0.35 and not 720mA.

SuggestedRemedy

Option A: (Recomended)

Delete figure 33-9a and use only figures 33-12b and figures 33-12c due to the fact that they contains PSE and PD data and hence figure 33-9a is redundant.

Option B:

Fix error in figure 33-9a and change title to read:
"Figure 33-9a - PSE PI maximum operating current vs. Time"

Proposed Response *Response Status* **O**

third time commentor pointed out Icable*.4/.35…

defer to Vport adhoc to determine correct title of Figure.

Cl **33** *SC* **2.8.8** *P* **44** *L* **5** # 138

Schindler, Fred — Cisco Systems

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

The reference to "Figure 33C.4 and Figure 33C.6" are no longer correct. The information provided in Figure 33-9a supersedes them.

SuggestedRemedy

Remove reference to "Figure 33C.4 and Figure 33C.6."

Proposed Response *Response Status* **O**

opposite comment of Yair 104 which asks to pull these into the normative text.

Cl **33** *SC* **2.8.8** *P* **44** *L* **7** # 57
Vetteth, Anoop Cisco

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

Figure 33-9a
Comment#215 for Draft 0.9 was accepted in principle. This comment dealt with changing 720mA on y-axis to Icable x 400/350

SuggestedRemedy

Implement the resolved comment

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **2.8.10** *P* **45** *L* **11** # 58
Vetteth, Anoop Cisco

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

Voff is a range between 0 and 2.8V hence cannot be used in the inequality

SuggestedRemedy

Change Voff to Voff_max

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **2.8.14** *P* **45** *L* **41** # 5
LANDRY, MATTHEW SILICON LABS

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

Is this a proper use of the 'CAUTION' statement?

SuggestedRemedy

If not, change it to a NOTE.

Proposed Response *Response Status* **O**

see 29

Cl **33** *SC* **2.9** *P* **45** *L* **49** # 198
Diab, Wael Broadcom

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

Please add "and 33.6" after 33.2.7 as a Type 1 can implement DLL per diab_2_1007.pdf.

SuggestedRemedy

Please add "and 33.6" after 33.2.7

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **2.9** *P* **45** *L* **51** # 140
Schindler, Fred Cisco Systems

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

The text, "The PSE may manage …. the attached PD.", removed from the legacy standard is still valid.

SuggestedRemedy

Restore the text.

Proposed Response *Response Status* **O**

this is baseline text we pulled out after D0.9. comment 148 from D0.9 struck it.
D0.9 Comment 148:
The text states that '.. and the mechanism for obtaining that additional information, is beyond the scope of this standard ..'. I do not believe that is true anymore due to the link layer classification protocol.
Remedy:
Reword to acknoledge link layer classification.
Response:
ACCEPT IN PRINCIPLE.

Delete 2nd paragraph of 33.2.9

not much help here…

Cl **33** *SC* **2.10** *P* **46** *L* **21** # 175

Diab, Wael Broadcom

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

In comment 268 of the D0.9 database we agreed to remove power if certain timeout conditions were met when DLL (L2) is running. I believe a simple mention that power may be removed under certain conditions when L2 is running and a pointer to 33.6 is needed here.

SuggestedRemedy

Please add the sentence

"Power may also be removed under certain timout scenarios as described in 33.6 when DLL classification is running".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

sentence should be inserted after sentence on line 13.

Cl **33** *SC* **3.1** *P* **47** *L* **39** # 7

LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **D** *ez*

"Mode-A" and "Mode-B" should be "Mode A" and "Mode B."

SuggestedRemedy

Fix it.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **3.1** *P* **49** *L* **41** # 152

Pincu, David Microsemi Inc.

Comment Type **TR** *Comment Status* **D** *4P*

The note in line 42 precludes the following applications:

1. Using two pairs to power a 10/100BT PD and using the other 2P in the same cable to power a 2nd 10/100BT PD.

2. Using two power sources one coming from Midspan and other coming from the switch to a single PD with separate power lines for redundancy and/or higher power application.

The standard should not preclude implementations that are using standard compliant cabling systems.

Theoretically a PD can get N x 2P power sources while each of the 2P system is well defined by the standard and the standard should not preclude it since it is implementation issue and it is not a source of interoperability issues.

SuggestedRemedy

Change from:

"NOTE-PDs that implement only Mode A or Mode B are specifically not allowed by this standard. PDs that simultaneously require power from both Mode A and Mode B are specifically not allowed by this standard."

to:

"NOTE-PDs that implement only Mode A or Mode B are specifically not allowed by this standard. PDs that simultaneously require power from both Mode A and Mode are not precluded by this standard as long as the requirements of this standard are kept for each mode."

Other equivalent wording is possible.

Proposed Response *Response Status* **O**

"1. Using two pairs to power a 10/100BT PD and using the other 2P in the same cable to power a 2nd 10/100BT PD."

This is a job for Geoff.

"2. Using two power sources one coming from Midspan and other coming from the switch to a single PD with separate power lines for redundancy and/or higher power application. The standard should not preclude implementations that are using standard compliant cabling systems. "

The job of a standard is to preclude implementations to ensure interoperability. In this case, there is a huge interoperability issue (not to mention a stringent design requirement) on the PD to accept power at disparate voltages from the two different 2P systems. As a PD designer, I want no part of the added cost and complexity from enabling this. I also don't believe that interoerability has been proven.
This issue has been popping up repeatedly in each draft. I suggest we make a motion and vote so we can resolve this and move on toward TF draft.

Cl **33** *SC* **3.1** *P* **49** *L* **41** # 115

Darshan, Yair Microsemi Corporation

Comment Type **TR** *Comment Status* **D** *4P*

Draft 1.0:

The note in line 42 precludes the following applications:
1. Using two pairs to power a 10/100BT PD and using the other 2P in the same cable to power a 2nd 10/100BT PD.

2. Using two power sources one coming from Midspan and other coming from the switch to a single PD with separate power lines for redundancy and/or power application.

The standard should not preclude implementations that are using standard compliant 2P system.

Theoretically a PD can get N x 2P power sources while each of the 2P system is well defined by the standard and the standard should not preclude it since it is implementation issue and it is not a source of interoperability issues.

SuggestedRemedy

Change from:

"NOTE-PDs that implement only Mode A or Mode B are specifically not allowed by this standard. PDs that simultaneously require power from both Mode A and Mode B are specifically not allowed by this standard."

to:
"NOTE-PDs that implement only Mode A or Mode B are specifically not allowed by this standard. PDs that simultaneously require power from both Mode A and Mode are not precluded by this standard as long as the requirements of this standard are kept for each mode."

Other equivalent wording is possible.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This comment is word for word identical to 152 - handle it there.
Turning in multiple comments that are TEXTUALLY IDENTICAL (and all from one company) accomplishes nothing, in fact it wastes my valuable time. It does not make the issue appear more important nor do I think it fools the TF into thinking that more people want a specific feature.
I volunteer to do this job not because I enjoy it. I want to see this standard finish up in a decent amount of time and a comment editor helps push that recircs out faster. Please respect my time and resist ganging up on comments.

Cl **33** *SC* **3.1** *P* **49** *L* **42** # 91

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **D** *4P*

The standard allow using for each pair up to Icable.
This Note prevents using all 4 pairs in a way that the total current will be Icable.
The end result would be less power on the cables, less power consumption on PSE.
If Icable meet the spec. of 2P then I<Icable certaily meets the same specification so preventing feeding the current all over the 4 pairs doesnt make sense.
This is implementation and we are not authrized to preclude implementations that meet the numbers and state machines of this standard.

SuggestedRemedy

Delete:
"PDs that simultaneously require power from both Mode A and Mode B are specifically not allowed by this standard."

Proposed Response *Response Status* **O**

As stated many times already, standards are exactly about limiting implementations to ensure interoperability. See 151 or 100 or 166 or 156 for my diatribe against this argument. As for changing the text, I suggest we put up a motion and vote on it then accept the result and move forward.

Cl **33** *SC* **3.1** *P* **49** *L* **45** # 11

LANDRY, MATTHEW — SILICON LABS

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

The statement "PD shall withstand any voltage from 0 V to 57 V at the PI indefinitely without permanent damage" is neither testable nor practical.

SuggestedRemedy

Replace the statement with a NOTE.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Of course it is not practical to test anything indefinitely but system designers understand what is implied with this statement.

As far as testable, I'm not sure what they do to test it but I am sure there is some time limit that is assumed to be long enough to extrapolate out to 'indefinitely'.

Cl **33** *SC* **3.1a** *P* **50** *L* **5** # 199

Diab, Wael — Broadcom

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

This section does not accurately reflect the decisions we made in October. Specifically, it mandates that a Type PD implement classification, which breaks 802.3-2005. Moreover, it rules out certain combinations that the table in diab_2_1007.pdf allows, like classifying a Type 2 PD using one event classification and DLL.

It is very difficult to retain this wording here as it is without getting into classification.

SuggestedRemedy

Rewrite this section as follows:

PDs can be categorized as either Type 1 or Type 2 (refer to 1.4). PDs may also implement Physical Layer Classification and/or Data Link Layer Classification. Permutations allowed by the standard are covered in section 33.3.4.

A Type 2 PD is required to achieve mutual identification with a Type 2 PSE as described in section 33.4. A Type 2 PD that does not achieve mutual identification shall conform to Type 1 PD power restrictions. Such a PD shall provide the user with local external notification that it is underpowered. The external notification mechanism is left to the implementor.

Proposed Response *Response Status* **O**

The new text is missing the shall that mandates the Type 2 PD to implement 2-event and DLL. For sure this is still a requirement. 202 points to 33.3.4 - the shalls are there. Maybe this text needs to have all shalls removed and be informative.

Cl **33** *SC* **3.1a** *P* **50** *L* **7** # 54

Vetteth, Anoop — Cisco

Comment Type **ER** *Comment Status* **D** *PD type*

We have adopted new definition for Type-1 and type-2 PDs based on the power requirments. Lines 7-12 does not reflect this.

SuggestedRemedy

Delete lines "This limits ..... Table 33-12" from paragraphs 2 and 3 of the section. Add a general line that refers to Table 33-12 for the maximum power requirements of type-1/type-2 PDs.

Proposed Response *Response Status* **O**

Cl **33** *SC* **3.2.3** *P* **52** *L* **12** # 251

Stanford, Clay Linear Technology

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

An entry was lost in the state diagram by error. It was in the .af spec.

SuggestedRemedy

Add to REQUESTING_POWER BLOCK

present_pd_siganture <= TRUE

Proposed Response *Response Status* **O**

This block is a holder for Figure 33-12a. Concievably this block could be deleted and replaced with 33-12a in which place your requested text would not exist.

Cl **33** *SC* **3.2.3** *P* **52** *L* **15** # 200

Diab, Wael Broadcom

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

Is there a priority issue with the exit conditions out of the REQUESTING_POWER state? Specifically, what happens if both exit conditions are asserted simultaneously?

SuggestedRemedy

There are 2 variables that govern the exit conditions in this state. This has 4 combinations. Please either draw in all 4 arrows OR show what happens if both variables are asserted

Proposed Response *Response Status* **O**

for sure the state diagrams still need work. Which one takes priority?

Cl **33** *SC* **3.2.3** *P* **52** *L* **8** # 14

LANDRY, MATTHEW SILICON LABS

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

'present_pd_signature' variable has been obsoleted.

SuggestedRemedy

Replace "present_pd_signature <= FALSE" occurrences with:
"present_det_sig <= FALSE" and
"present_class_sig <= FALSE"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **3.2.3** *P* **53** *L* **4** # 252

Stanford, Clay Linear Technology

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

See Clay's redlines regarding state diagram.

SuggestedRemedy

Update state diagram.

Proposed Response *Response Status* **O**

awaiting redline drawings.

Cl **33** *SC* **3.3** *P* **54** *L* **23** # 253

Stanford, Clay Linear Technology

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

The parameter name was changed from VI to slope.

Table 33-8 still uses V-I slope.

Pick a consistent name.

SuggestedRemedy

Proposed Response *Response Status* **O**

Cl **33** *SC* **3.4** *P* **56** *L* **11** # 254

Stanford, Clay Linear Technology

Comment Type **T** *Comment Status* **D** *pd type*

Type 1 PDs have the option of implementing 2-event classificaton and also DLL.

SuggestedRemedy

IS:
Type 1 PDs may implement a 1-Event Physical Layer classification (see 33.3.4.1).

SHOULD BE: (CAPS INDICATE ADDITION)
Type 1 PDs may implement a 1-Event Physical Layer classification (see 33.3.4.1) OR 2-EVENT CLASSIFICATION (SEE 33.XX), DATA LAYER CLASSIFICATION (SEE 3.X), OR A COMBINATION OF THESE.

Proposed Response *Response Status* **O**

Cl **33** *SC* **3.4** *P* **56** *L* **11** # 202

Diab, Wael — Broadcom

Comment Type **TR** *Comment Status* **D** *pd type*

This text does not relfect the entire set of possibilities that we agreed to in diab_2_1007.pdf. Specifically, a Type 1 PD may also implement DLL.

SuggestedRemedy

Please append the following text to this sentence "Type 1 PDs may implement a 1-Event Physical Layer classification (see 33.3.4.1)." :

A Type 1 PD may implement DLL. DLL classification must be preceded by a 1-Event Physical Layer classification.

Proposed Response *Response Status* **O**

this begs a question. Are type 1 PDs that implement DLL responsible to check that 1-event has happened?
Plus we missed a case in the table, what about type 1 PSEs that don't implement classification (as they are allowed to do in AF). Are they allowed to use DLL (not for mutual ID but to refine power down from 13W)?

Cl **33** *SC* **3.4** *P* **56** *L* **13** # 201

Diab, Wael — Broadcom

Comment Type **TR** *Comment Status* **D** *pd type*

This text does not relfect the entire set of possibilities that we agreed to in diab_2_1007.pdf. Specifically, a Type 2 PD needs to also implement a one event physical layer classification that would be used in conjunction with DLL.

SuggestedRemedy

Please rewrite the following sentence to:

"Type 2 PDs shall implement 1-Event Physical Layer classification, 2-Event Physical Layer classification (see 33.3.4.2) and Data Link Layer classification (see 33.6). A Type 2 PD can not reply on one event classification by itself. DLL classification must be preceded by either a 1-Event Physical Layer classification or 2-Event Physical Layer classification."

Proposed Response *Response Status* **O**

"Type 2 PDs shall implement 1-Event Physical Layer classification, 2-Event Physical Layer classification (see 33.3.4.2) and Data Link Layer classification (see 33.6). A Type 2 PD can not rely on 1-Event classification by itself. DLL classification must be preceded by either a 1-Event Physical Layer classification or 2-Event Physical Layer classification."

Cl **33** *SC* **3.4.1** *P* **56** *L* **18** # 150

Beia, Christian — STMicroelectronics

Comment Type **TR** *Comment Status* **D** *pd type*

The Permutation table voted in Richfield covers also Type1 PD 2-event classification.
I suggest to add a sentence explaing that the behavior of a type1 PD performing a 2-event classification is undefined (or out of the scope of this standard).

SuggestedRemedy

Add a sentence as follows:
The behavior of Type 1 PD during classification events after the first one is undefined.

Proposed Response *Response Status* **O**

If a PD implements 2-Event (along with 1-event [by subset] and DLL) it is NOT a Type 1, by definition it is a Type 2. Type 2 PSEs are allowed to stop after 1-event if class <> 4 after first event. I'm thinking it should be manatory that PSEs stop after finding 0, 1, 2, 3. That would solve this problem.
If we were to add this sentence, it should be in 33.3.4.2 not 33.3.4.1.

Cl **33** *SC* **3.4.1** *P* **56** *L* **18** # 145

Beia, Christian — STMicroelectronics

Comment Type **E** *Comment Status* **D** *pd type*

The title of the paragraph 33.3.4.1 refers to 1-event PL classification, but the body is about classification performed only by Type1 PDs.
I suggest modify the title, referring to Type1 PDs

SuggestedRemedy

Modify the title as follows:
33.3.4.1 Type1 PD Phisical Layer Classification

Proposed Response *Response Status* **W**

PROPOSED REJECT.

similar to 147
see comment 201 which asserts that Type 2 PDs must now perform 1-Event along with 2-Event and DLL.
Therefore, PD 1-Event… is the correct title.

Cl **33** *SC* **3.4** *P* **56** *L* **2** # 168

Diab, Wael — Broadcom

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

Please insert a copy of the Table and associated text from diab_2_1007.pdf in this section with introductory text, prior to the text present as the table covers both PSE and PD implementations.

SuggestedRemedy

Please insert a copy of the Table and associated text from diab_2_1007.pdf at the begining of this section with the following introductory text:

"An 802.3at PD implementing classification shall meet one of the permutaiuons lsted in Table 33-2a"

Proposed Response *Response Status* **O**

set to T by CE.

Cl **33** *SC* **3.4.1** *P* **56** *L* **32** # 12

LANDRY, MATTHEW — SILICON LABS

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

The Usage column in Table 33-10 adds no value.

SuggestedRemedy

Remove it.

Proposed Response *Response Status* **O**

see 141, wants to modify rightmost column

Cl **33** *SC* **3.4.1** *P* **56** *L* **34** # 141

Schindler, Fred — Cisco Systems

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

Table 33-10 is not clear. Why is a range of maximum stated? Maximum is a single value per class. Some people assume the lower bound is a minimum power requirement and this is incorrect. The minimum power required to maintain PSE powering is covered in 33.3.6.

SuggestedRemedy

Only state the maximum class power allowed. Replace the third column with:
Maximum power used by the PD (W)
12.95
3.84
6.49
12.95
TBD

Proposed Response *Response Status* **O**

see 12, wants to remove usage column

Cl **33** *SC* **3.4.2** *P* **57** *L* **17** # 146

Beia, Christian — STMicroelectronics

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

The title of the paragraph 33.3.4.2 refers to 2-event PL classification, but the body covers the behavior of a Type2 PD irrespective of the number of classification voltage probes performed (line 48).

SuggestedRemedy

Modify the title as follows:
33.3.4.2 Type2 PD Phisical Layer Classification

Proposed Response *Response Status* **W**

PROPOSED REJECT.

See 145 for reasoning.

Cl **33** *SC* **3.4.2** *P* **57** *L* **38** # 255

Stanford, Clay Linear Technology

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

Define Mark Event Voltage range. It will make text more clear.

Define Reset Voltage range. It will make text more clear.

Label Reset Threshold Vreset_th to be more consistant.

SuggestedRemedy

Table 33-11a

Item 2: Add "10" to max column.

Item 5: Change Symbol from Vreset to Vreset_th

Add new item 6, Classification Reset Voltage Vreset V 0(V) 2.8(V) See 33.3.4.2.1

Proposed Response *Response Status* **O**

see 256

Cl **33** *SC* **3.4.2** *P* **57** *L* **50** # 111

Darshan, Yair Microsemi Corporation

Comment Type **T** *Comment Status* **D** *L1 adhoc*

Draft 1.0:
PD don't have to present class 4 for infinite classification attempts.
Id adds thermal burden and costs.
In any case if system has problems it may initiate consecutive startups every Ted which is defined in Table 33-5 item 21.

SuggestedRemedy

To be added after line 50.
"PD may revert to IDLE state if PSE initiate more then 3 consecutive classification attempts within less then Ted as specified in Table 33-5."

Proposed Response *Response Status* **O**

defer to L1

Cl **33** *SC* **3.4.2.1** *P* **57** *L* **53** # 256

Stanford, Clay Linear Technology

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

Text will be more clear if we use Vmark range.

SuggestedRemedy

Line 53 IS:

When the voltage at the PI is between VMark min and VMark_th min, a Type 2 PD shall return a non-valid detection signature as defined in Table 33–9.

Line 53 SHOULD BE:
When the voltage at the PI is IN THE RANGE OF Vmark, a Type 2 PD shall return a non-valid detection signature as defined in Table 33–9.

Proposed Response *Response Status* **O**

see 255

Cl **33** *SC* **3.4.2.1** *P* **58** *L* **1** # 257

Stanford, Clay Linear Technology

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

Requirement needs to be in the range of Vclass, not mearly above the minimum.

SuggestedRemedy

Line 1 IS:
A Type 2 PD must return a Class 4 signature when voltage at the PI is greater than VMark_th max.

Line 1 SHOULD BE:
A Type 2 PD must return a Class 4 signature when voltage at the PI is IN THE RANGE OF Vclass.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **3.4.2.1** *P* **58** *L* **2** # 258

Stanford, Clay Linear Technology

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

It will be more clear and technically more accurate if we use Vmark range.

SuggestedRemedy

Line 4 IS:
A Type 2 PD must draw IMark when voltage at the PI is less than VMark_th min

Line 4 SHOULD BE:
A Type 2 PD must draw IMark when voltage at the PI is IN THE RANGE OF VMARK.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **3.5** *P* **59** *L* **16** # 31

LANDRY, MATTHEW SILICON LABS

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

Item 1 should be describing static VPort, while 1a can describe transient VPort.

SuggestedRemedy

(1) Change item 1: 37V min, 57V max for Type 1. 41V min, 57V max for Type 2.

(2) Change item 1a to apply to Type 1 and Type 2. Note to "see 33.3.5.1"

(3) Adjust note in 33.3.5.1 to say: "The specification for Vport in Table 33-12 (item 1) and VTran_lo (item 1a) is for the input voltage range after startup, and takes into account loss in the cabling plant."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **3.5** *P* **59** *L* **16** # 259

Stanford, Clay Linear Technology

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

PD input voltage should be 37V, not 36V. We clarified this by adding the transient section 1a.

Transient section 1a needs to define Type 1 and Type 2 PSEs.

SuggestedRemedy

Table 33-12, item 1
Vport min IS 36V for a type 1.

Table 33-12, item 1
Vport min SHOULD BE 37V for a type 1.

Item 1a IS:
Transient operating input voltage
VTran_low Vdc 36 (blank) 2

Item 1a SHOULD BE:
Transient operating input voltage
VTran_low Vdc 36 (blank) 1
Vdc 40 (blank) 2

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

First half OBE see 31

Item 1a IS:
Transient operating input voltage
VTran_low Vdc 36 (blank) 2

Item 1a SHOULD BE:
Transient operating input voltage
VTran_low Vdc 36 (blank) 1
Vdc 40 (blank) 2

Cl **33** *SC* **Table 33-12** *P* **59** *L* **17** # 95

Darshan, Yair Microsemi Corporation

Comment Type **TR** *Comment Status* **D** *Vport adhoc*

Draft D1.0:

Table 33-12 items 1:
It is 39.71V and not 40V (50-12.5 OHMS x 0.72A*0.4A/0.35A=39.71V).

SuggestedRemedy

Table 33-12 item 1 for type 2 PD:
Change PD minimum operating voltage to 39.71V.

Proposed Response *Response Status* **O**

see 31, recommended 41V…

defer to Vport

Cl **33** *SC* **3.5** *P* **59** *L* **22** # 260

Stanford, Clay Linear Technology

Comment Type **E** *Comment Status* **X** *Vport adhoc*

We decided to not reference the actual power levels but use parameters.

Change 29.5W to Icable * Vport_min

Do we do the same for 12.95W????

SuggestedRemedy

Proposed Response *Response Status* **W**

OBE see 32

Cl **33** *SC* **3.5** *P* **59** *L* **22** # 32

LANDRY, MATTHEW SILICON LABS

Comment Type **T** *Comment Status* **D** *Vport adhoc*

Table 33-12 item 2 describes max static power. This can be expressed in terms of current and Vport.

SuggestedRemedy

Replace Type 1 max PPort with 0.35*VPort min. Replace Type 2 max with ICable*VPort min.

These equations presume that VPort mins are updated to 37V and 41V, respectively.

Proposed Response *Response Status* **O**

defer to Vport

Cl **33** *SC* **3.5** *P* **59** *L* **27** # 112

Darshan, Yair Microsemi Corporation

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

We used the same symbol for Iport average in item 5 and for Iport peak in item 4.

SuggestedRemedy

Change symbol in item 5 from "Iport" to "Iport_peak"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE see 35

Cl **33** *SC* **3.5** *P* **59** *L* **38** # 36

LANDRY, MATTHEW SILICON LABS

Comment Type **TR** *Comment Status* **D** *Vport adhoc*

Item 5 is really doing nothing more than telling the reader that IPort should scale with VPort.

They reader should already know this, as PPort max is a max power. Clearly if VPort moves, IPort has to move.

That being said, how is item 5 at all helpful?

SuggestedRemedy

(1) Strike item 5.

or

(2) Remove the multiple lines, and replace item 5 with:
Item: 5
Parameter: Input current (DC or RMS)
Symbol: IPort
Unit: A
Min:
Max: PPort max / VPort
PD Type: 1,2
Addl Info: See 33.3.5.4

Proposed Response *Response Status* **O**

defer to Vport

Cl **33** *SC* **3.5.1** *P* **60** *L* **31** # 105

Darshan, Yair Microsemi Corporation

Comment Type **T** *Comment Status* **D** *Vport adhoc*

Draft D1.0:
Table 33-12 item 1 (Vport) may lead to confusion in the future regarding to how it was derived.
The facts are:
a) Vport minimum for type 1 was derived at peak input power (0.4A) and not at steady state current (0.35A).
(44v-20 ohms * 0.4A=36V.)
(44v-20 ohms * 0.35A=37V.)
The same concept is relevant to Type 2 PSE.
We need to clarify it in the text of 33.3.5.1

SuggestedRemedy

Change line 31 from:

"The specification for VPort in Table 33-12 is for the input voltage range after startup, and it includes loss in the cabling plant."

to:
"The specification for VPort in Table 33-12 is for the input voltage range after startup, and it includes loss in the cabling plant at PD maximum peak load current, as defined by table 33-12 item 4.
PD input voltage at maximum average current is given in Table 33-12 item 5."

Proposed Response *Response Status* **O**

see 31, 259 which suggest changing item in table to 37V.

Cl **33** *SC* **3.5.2** *P* **60** *L* **41** # 118

Vetteth, Anoop Cisco

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

This section does not referecnce the power negotiated by the PD over Physical Layer Classification or DLL Classification

SuggestedRemedy

Start the section with a paragraph that references the classified power
Suggestion:
Pport_max is the maximum permissible power negotiated over physical layer classification (per table 33-10) or data link layer classification (as defined in section 33.6a.2.2). Data link layer classification takes precedence over physical layer classification

Proposed Response *Response Status* **O**

Cl **33** *SC* **3.5.2** *P* **60** *L* **44** # 142

Schindler, Fred — Cisco Systems

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

Use a generic variable to convey 12.5 ohms and 20 ohms used in the text.

SuggestedRemedy

Replace the resistance with Rch and provide a table that list channel characteristics for the cable classes supported.
Ex/
CLASS-D Icable = 720 mA, Rch = 12.5 ohms

Proposed Response *Response Status* **O**

Cl **33** *SC* **3.5.2** *P* **60** *L* **47** # 34

LANDRY, MATTHEW — SILICON LABS

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

The equation and instructions for measuring PPort seem unnecessary. The power limit applies regardless of the PSE voltage and cable impedance.

The sudden appearance of a resistive approximation of the cable plant really adds nothing for the reader. Stating that the power limit applies over the specified input voltage range is simply redundant. Telling the reader that power equals voltage times current is a bit patronizing.

SuggestedRemedy

Replace 33.3.5.2 with the following:

33.3.5.2 Input average power

The specification for PPort in Table 33-12 (item 2) shall apply for the input power averaged using any sliding window with a 1s width.

Proposed Response *Response Status* **O**

Cl **33** *SC* **3.5.4** *P* **61** *L* **16** # 269

Law, David — 3Com

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

Not entirely sure what 'At any static voltage at the PI and PD operating condition' means, think it is meant to mean that any PI voltage and any PD operating condition.

SuggestedRemedy

Change the text 'At any static voltage at the PI and PD operating condition the peak current ..' to read 'At any static voltage at the PI, and any PD operating condition, the peak current ..'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **3.5.4** *P* **61** *L* **16** # 219

Law, David — 3Com

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

The text states 'Peak current shall not exceed IPort max'. Which IPort max is this, looking at Table 33-12 Iport appears in both Items 4 and 5 and both of these items reference this subclause.

SuggestedRemedy

I believe that item 4 provides the IPort max that is being referenced, for clarity suggest that the text '(See Table 33-12, item 4)' be added.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **3.5.4** *P* **61** *L* **17** # 223

Law, David — 3Com

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

Not entirely sure what 'At any static voltage at the PI and PD operating condition' means, think it is meant to mean that any PI voltage and any PD operating condition.

SuggestedRemedy

Change the text 'At any static voltage at the PI and PD operating condition the peak current ..' to read 'At any static voltage at the PI, and any PD operating condition, the peak current ..'.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

duplicate of 269

Cl **33** *SC* **3.5.4** *P* **61** *L* **17** # 143

Schindler, Fred — Cisco Systems

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

The value of Iport_max created by the formula-using PD Pport_max-does not match the value provided in table 33-12. For example, class 0 PD power is 12.95 W maximum and 12.95W/36V = 360 mA, not the 400 mA shown in table 33-12, item 4.

SuggestedRemedy

The PD formula provides the correct answers when the PSE Pport_max values are scaled by 400/350 for the system classified power. A presentation will be provided at the Atlanta Plenary to cover the details.

Proposed Response *Response Status* **O**

Cl **33** *SC* **3.5.4** *P* **61** *L* **17** # 270

Law, David — 3Com

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

The text states 'Peak current shall not exceed IPort max'. Which IPort max is this, looking at Table 33-12 Iport appears in both Items 4 and 5 and both of these items reference this subclause.

SuggestedRemedy

I believe that item 4 provides the IPort max that is being referenced, for clarity suggest that the text '(See Table 33-12, item 4)' be added.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Duplicate of 219

Cl **33** *SC* **3.5.4** *P* **61** *L* **17** # 262

Stanford, Clay — Linear Technology

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

It is unclear what the author intends:
IS:
At any static voltage at the PI and PD operating condition the peak current shall not exceed PPort max/VPort....

Does the autor mean:
At any static voltage at the PI and FOR ANY PD operating condition the peak current shall not exceed PPort max/VPort....

OR DOES THE AUTOR MEAN:
At any static voltage at the PI and AT ANY STATIC PD operating condition the peak current shall not exceed PPort max/VPort....

I think the first is the intent.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

OBE see 269

Cl **03** *SC* **3.5.4** *P* **61** *L* **18** # 93

Darshan, Yair — Microsemi Corporation

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

The "peak current" in line 18 is the peak current in Table 33-12 item 4.

SuggestedRemedy

Change the last sentence in line 18 from:

"Peak current shall not exceed IPort max."

to:

"Peak current shall not exceed IPort_peak max
as defined by Table 33-12 item 4."

Note to the group: Iport in this line was Iport at table 33-12 item 4. Iport average is defined by item 5.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE see 35

Cl **33** *SC* **3.5** *P* **61** *L* **27** # 35

LANDRY, MATTHEW — SILICON LABS

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

The 'Peak operating current' specs really should have a different Symbol than the static IPort.

SuggestedRemedy

Rename item 4 to IPortpk. Adjust 33.3.5.4 to say "Peak current shall not exceed IPortpk max."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See 93

Cl **33** *SC* **3.5.2** *P* **61** *L* **3** # 162

Jones, Chad — Cisco

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

"NOTE—Duty cycle shall be calculated using any sliding window with a 1 s width."
This note contains a shall and the note is in the wrong place.
There is no mention of duty cycle in 33.3.5.2 where it is located.
Lastly can we spell out second?

SuggestedRemedy

change it to "Duty cycle is calculated using any sliding window with a 1 second width."
move it to section 33.3.5.4 just after the first paragraph.

Proposed Response *Response Status* **O**

Cl **33** *SC* **3.5.4** *P* **61** *L* **36** # 33

LANDRY, MATTHEW — SILICON LABS

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

The equations use absolute numbers for the port power. They should be variables, which has the added benefit of needing only one equation.

SuggestedRemedy

Replace equation with:
IPort_max = PPort_max / VPort
where
IPort_max is the max DC and RMS input current
PPort_max is the maximum power as defined in Table 33-12 item 2
VPort is the static input voltage

Remove reference to Type 1 PDs, and remove second equation entirely.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **3.5.4** *P* **61** *L* **37** # 263

Stanford, Clay Linear Technology

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

Iport_rms should just be called Iport.

IS:
The maximum IPort_dc and IPort_rms values for all operating VPort range shall be defined....
SHOULD BE:
The Iport_max value for all operating VPort range shall be defined....

IS:
Iport_max is the maximum DC and RMS input current
SHOULD BE:
Iport_max is the maximum DC and AC input current

Actual power levels 12.95W and 29.5W are referenced. Change to equations.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE see 33

Cl **33** *SC* **3.5.3** *P* **61** *L* **9** # 261

Stanford, Clay Linear Technology

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

Error in percent.

IS: 99%
Should be 1%.

SuggestedRemedy

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Strike 'within' at the end of line 8.

Cl **33** *SC* **3.5.3** *P* **61** *L* **9** # 92

Darshan, Yair Microsemi Corporation

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

See previous comments regarding Tinrush.
Change "TLIM" to "Tinrush"

SuggestedRemedy

Change "TLIM" to "Tinrush"

Proposed Response *Response Status* **O**

see 89, 109

Cl **33** *SC* **3.5.3** *P* **61** *L* **9** # 120

Vetteth, Anoop Cisco

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

There is no shall statement in this section that mandates that all Type-2 PDs have to satisfy the same inrush criterion as Type-1 PDs.

SuggestedRemedy

Add text:
Type 2 PDs with pse_power_type state variable set to type 2 prior to power-ON shall behave like a type 1 PD during the startup period.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **3.5.4a** *P* **62** *L* # 59

Vetteth, Anoop Cisco

Comment Type **TR** *Comment Status* **D** *Vport adhoc*

Figure 3-12b and 3-12c
This is PD section and hence the SOA curve for the PSE is irrelevant.

PD_Toverload was defined in the presentation. The maximum value of PD_Toverload is PSE_Tcutmin. Hence PD_Toverload is not relevant anymore.

SuggestedRemedy

Remove the SOA curve for the PSE from both the figures.

Remove PD_Toverload and make the overload max duration to PSE_Tcutmin

Explain the mask in text using inequalities.

Proposed Response *Response Status* **O**

defer to Vport

Cl **33** *SC* **figure 33-12b** *P* **62** *L* **31** # 94

Darshan, Yair Microsemi Corporation

Comment Type **TR** *Comment Status* **D** *Vport adhoc*

It can be understood from the drawing the PSE may remove power at I=0.9999999999*(0.4/0.35)*(Pport/Vport) and t=49.99999999msec which is incorect.
PSE must not remove power at this region due to the fact that PD allowed to take peak current up to this point.
It is ILIM_MIN.

SuggestedRemedy

1. Move the solid hirizontal line from PD_Tovld to Tcut_min.
2. Delete PD_Toverload due to the fact that it doesnt add additional information.
3. Add "PSE shall not remove power" below the PD max. operating current curve.

4. See figure 33-12c and add the "PSE shall not remove power" below the PD max. operating current curve.
The rest is OK.

Proposed Response *Response Status* **O**

referred to Vport ahdoc to review and resolve.

parts 3 & 4, comment 59 refers to removing PSE requirement in the PD section.

Cl **33** *SC* **3.5.4a** *P* **62** *L* **48** # 165

Jones, Chad Cisco

Comment Type **TR** *Comment Status* **D** *Vport adhoc*

"During transient conditions in which the voltage at the PI is undergoing dynamic change, the PSE is responsible for limiting the transient current drawn by the PD for up to 10 ms." This is a PSE design requirement (though it does not carry a shall, it is information that a PSE designer should know) and it is located in the PD section. I can't find the corresponding information in 33.2.

SuggestedRemedy

Find an appropriate place in 33.2 to add this information, perhaps 33.2.8.2b.

Proposed Response *Response Status* **O**

defer to vport

Cl **33** *SC* **3.5.5** *P* **63** *L* **41** # 37

LANDRY, MATTHEW SILICON LABS

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

This paragraph refers only to a 20ohm resistor and Type 1 PSE voltages.

SuggestedRemedy

Replace the following:
"... when a PD is connected to a PSE through a series resistance of up to 20ohm and the PSE voltage is changed from 44V to 57V ..."

with:
"... when a PD is connected to a PSE through the maximum permitted cabling resistance (20ohm for Type 1, 12.5ohm for Type 2) and the PSE voltage is changed from its minimum allowed value to its maximum allowed value (see 33.2.8) ..."

Or perhaps refer to the proper cabling specification.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

I'd considered commenting on this before but then convinced myself that the Type 2 PD has to conform to the Type 1 PD specs when being powered as a Type 1 and that they Type 2 specs will be a subset of Type 1.

Cl **33** *SC* **3.5.9** *P* **64** *L* **20** # 29

LANDRY, MATTHEW SILICON LABS

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

Is this an appropriate use of the 'CAUTION' designator?

SuggestedRemedy

Turn the CAUTION into a NOTE.

Proposed Response *Response Status* **O**

see 5

Cl **33** *SC* **3.6.1** *P* **65** *L* **11** # 38

LANDRY, MATTHEW SILICON LABS

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

Section 33.3.6.1 is unnecessarily verbose. The whole point is that a PD must draw 10mA minimum, even if it has a large cap and undergoes a voltage droop from the PSE.

SuggestedRemedy

Remove all text in 33.3.6.1 and replace with the following:

NOTE--A PD with CPort > 180uF may not be able to mee the Iport specification in Table 33-13 during the maximum allowed power voltage droop (PSE VPort max to VPort min with resistance as described in 33.3.5.5). Such a PD should increase its IPort min or make other such provisions to ensure meeting the DC maintain power signature.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Remove all text in 33.3.6.1 and replace with the following:

NOTE--A PD with CPort > 180uF may not be able to meet the Iport specification in Table 33-13 during the maximum allowed power voltage droop (PSE VPort max to VPort min with resistance as described in 33.3.5.5). Such a PD should increase its IPort min or make other such provisions to ensure meeting the DC maintain power signature.

Cl **33** *SC* **3.6** *P* **65** *L* **5** # 30

LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **D** *ez*

Another "Iport" is confusing, especially since it has a slightly different case than Table 33-12's IPort.

SuggestedRemedy

Replace this DC MPS current symbol with something more unique, like IPort_MPS

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

See 218 for other locations

Cl **33** *SC* **3.6** *P* **65** *L* **5** # 218

Law, David 3Com

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

I believe it should be IPort and not Iport.

SuggestedRemedy

Correct Iport to IPort in the following locations:

Page 65, line 5.
Page 93, line 20.
Page 112, line 6.
Page 132, line 32.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

see 30, recommends changing variable name to avoid confusion.

Point 30 to 218 or copy the locations.

Cl **33** *SC* **4.2** *P* **67** *L* **1** # 15

LANDRY, MATTHEW SILICON LABS

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

The IEC 60060 does not have a year associated with it.

SuggestedRemedy

Please clarify the exact year of issue.

Proposed Response *Response Status* **O**

Cl **33** *SC* **4.3** *P* **67** *L* **14** # 17

LANDRY, MATTHEW SILICON LABS

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

"Resistor matching to 1 part in 100" is just an obtuse way of saying that the resistors should be 1% tolerance.

SuggestedRemedy

Figures 33-14, 33-15, 33-17, replace X Ohms* with X Ohms +/- 1%, and delete the *Note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **4.3** *P* **67** *L* **25** # 16

LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **D** *ez*

Stray 'and' at the end of the definition of 'f'

SuggestedRemedy

Remove ", and"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **4.8.1.1** *P* **71** *L* # 228

Law, David 3Com

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

I think there are actually already more two types of Midspans defined.

Subclause 33.4.8, and its subclauses, in IEEE 802.3af defines additional requirements placed on Midspans. It describes the requirements for Midspans that can be placed in Connector or Telecom Outlet Midspans (33.4.8.1) and Work area or Equipment cable Midspans (33.4.8.1.4). If I am reading the requirements in the subclauses correctly I believe there is a set of requirements that apply to Connector and Telecom Outlet Midspans and another set that applies to Work area or Equipment cable Midspans.

Starting with the first set of Midspans, subclause 33.4.8.1.1 requires NEXT to meet or exceed 40 - 20log(f/100) which at 100Mhz yields a minimum requirement 40dB. Subclause 33.4.8.1.2 requires the insertion loss to meet or exceed 0.04SQRT(f) which at 100MHz yields a minimum requirement of 0.4dB. Subclause 33.4.8.1.3 requires return loss to meet or exceed 14dB at 100MHz (see table 33-14). Now summarizing this with the Cat5, Cat5e and Cat 6 values for these parameters yields:

Category	Cat5	Cat5e	Cat6	Clause 33
NEXT loss	40	43	54	40
Insertion loss	0.4	0.4	0.2	0.4
Return loss	14	18	22	14

All values at 100MHz in dB.

Based on this it seems a Connector or Telecom Outlet Midspans is only required to meet the Cat 5 requirements. In some ways this seems reasonable as we were only supporting 10BASE-T and 100BASE-T and taking out a Cat5 connector and replacing it with a Midspan that meets the Cat 5 performance specification will maintain a Cat 5 channel.

Now looking at Equipment cable Midspans it states that the Midspan shall meet Cat 5 jumper requirements of ISO/IEC 11801:2002. My understanding is that ISO/IEC 11801 defines components as Categories and channels as Classes. Hence to form, for example, a Class E channel, Category 6 components such as connectors and jumpers have to be used. Now in the case of ISO/IEC 11801:2002 the specifications for Category 5 and Class D were updated from that found in ISO/IEC 11801:1995. Hence a ISO/IEC 11801:2002 Category 5 jumper is equivalent to a TIA/EIA 568 Category 5e jumper.

Based on this it seems a Work area or Equipment cable Midspans is required to meet the Cat 5e requirements.

So as well as updating the Midspan specification to include support for Alternative B and 1000BASE-T operation we also need to grandfather in the existing Midspans. This would seem to yield three types of Midspans, assuming that we would combine the performance

requirements for 1000BASE-T Connector or Telecom Outlet as well as Work area or Equipment cable Midspans. These are [a] 10/100BASE-T Connector or Telecom Outlet Midspans, [b] 10/100BASE-T Work area or Equipment cable Midspans and [c] 1000BASE-T Midspans.

SuggestedRemedy

[1] List the three types of Midspans:

10/100BASE-T Connector or Telecom Outlet Midspans.
10/100BASE-T Work area or Equipment cable Midspans.
1000BASE-T Midspans.

[2] Update the specification for NEXT, Insertion loss and Return loss in 33.4.8.1.1 through 33.4.8.1.3 to support 1000BASE-T Midspan operation while grandfathering in existing Midspan PSE that may not meet these requirements.

[3] Add the additional performance parameters specified in ANSI/EIA/TIA-568-B1 Annex D to support 1000BASE-T operation.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **4.8** *P* **71** *L* **1** # 18

LANDRY, MATTHEW SILICON LABS

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

Only the first occurrence of "ISO/IEC 11801-2002" contains the ISO and year references. The rest in this section only refer to "IEC 11801." This may be confusing, and there doesn't seem to be a practical reason for not specifying the document completely.

Furthermore, we reference ISO/IEC 11801:1995 in 3.1.5, which is a different year and notation. Pick the one we want to stick with.

SuggestedRemedy

Replace "IEC 11801" with "ISO/IEC 11801:1995" or whatever is appropriate.

Proposed Response *Response Status* **O**

Cl **33** *SC* **4.8** *P* **72** *L* **52** # 220

Law, David 3Com

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

This subclause states that 'A Midspan PSE inserted into a channel shall provide continuity for the signal pairs.'. I'm not too sure what the term 'continuity' is mean to mean here - if it is an uninterrupted connection I don't think that is true anymore in the case of a Alternative B midspan which will have to use some form of DC blocking to ensure that power can only be sourced in one direction. That of course is covered on the next line which states 'Midspan PSE shall not provide DC continuity between the two sides of the segment for the pairs that inject power.'.

SuggestedRemedy

I suspect that the best approach is simply to delete the text 'A Midspan PSE inserted into a channel shall provide continuity for the signal pairs.' now that Alternative B Midspans are permitted. The line before it still requires that the channel characteristics be maintained.

Proposed Response *Response Status* **O**

It is intended to point out that they must provide continuity for the data. Perhaps this is obvious and we should delete the text.
This is baseline text…

Cl **33** *SC* **4.8.1** *P* **73** *L* **12** # 19

LANDRY, MATTHEW SILICON LABS

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

This line references "ISO 11801:2002." Is this correct? Or do we want to reference "ISO/IEC 11801:1995?"

SuggestedRemedy

Pick the right ISO/IEC 11801 reference and make it consistent throughout the document.

Proposed Response *Response Status* **O**

I think it should be 2002. see 233

Cl **33** *SC* **4.8.1.1** *P* **73** *L* **30** # 229

Law, David 3Com

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

Need to add that the frequency used in the equation is in MHz - if you just use HZ - and there is nothing to say what to use - you kind of get the wrong answer - for example a NEXT loss of -80dB at 100MHz. I however don't think the variable needs to mention 1MHz to 100MHz as is stated in the text that the equation only needs to be met over that range.

SuggestedRemedy

Change the text 'is the frequency from 1 MHz to 100 MHz' to read 'is the frequency in MHz.

Perform the same change for equation 33-6 (Page 73, line 44)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **4.8.1.4** *P* **74** *L* **14** # 233

Law, David 3Com

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

ISO/IEC 11801 defines components as Categories and channels as Classes. Hence to form, for example, a Class E channel, Category 6 components such as connectors and jumpers have to be used. Now in the case of ISO/IEC 11801:2002 the specification for Category 5 and Class D were updated from that found in ISO/IEC 11801:1995. Hence a ISO/IEC 11801:2002 Category 5 jumper is equivalent to a TIA/EIA 568 Category 5e jumper.

SuggestedRemedy

Change '.. ISO/IEC 11801:1995 ..' to read '.. ISO/IEC 11801:2002 ..'.

Proposed Response *Response Status* **O**

see 203

Cl **33** *SC* **4.8.1.4** *P* **74** *L* **14** # 203

Diab, Wael Broadcom

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

I believe the change here was based on comment 82 from the D0.9 database that we agreed to AIP after we reviewed with Alan. Upon further review, it was agreed that the original text was indeed correct as it asked for components of higher quality per the 2002 standard and the change should have not been made.

SuggestedRemedy

Please revert to the original text per the rejected comment

Proposed Response *Response Status* **O**

response from Alan:
"As I see it, there are 2 ways to resolve this:

1. Reference Class D 1995 (and therefore Cat 5 1995 cords, connectors, etc) but impose a 25ohm DCLR requirement instead of 40ohms specified by Class D 1995. This will meet existing cable and DCLR objectives.

2. Reference Class D 2002 (and therefore Cat 5 2002, i.e. Cat 5e, cords, connectors, etc) which will meet the 25ohm DCLR objective. This will require you to amend the cabling objective.

I don't see any other options."

and further clarification from David:

"Hi Alan,

I believe I now understand what is going on here. The comment reads as follows:

Comment: 82
Clause: 33
SubClause: 4.8.1.4
Page: 55
Line: 1
Comment Type: TR
Comment: Category 5 is obsolete now that 1000BASE-T is supported.
SuggestedRemedy: Change to Category 5E.

The subclause in question reads:

33.4.8.1.4 Work area or equipment cable Midspan PSE

Replacing the work area or equipment cable with a cable that includes a Midspan PSE

should not alter the requirements of the cable. This cable shall meet the requirements of this clause and the specifications for a Category 5 (jumper) cord as specified in ISO/IEC 11801:2002 for insertion loss, NEXT, and return loss for the transmit and receive pairs.

So this text is saying that if a cable includes a Midspan that cable shall meet the Category 5 (jumper) specification in ISO/IEC 11801:2002. Now, correct me if I am wrong, but my understanding is that ISO/IEC 11801 defines components as Categories and channels as Classes. Hence to form, for example, a Class E channel, Category 6 components such as connectors and jumpers have to be used. Now in the case of ISO/IEC 11801:2002 the specification for Category 5 and Class D were updated from that found in ISO/IEC 11801:1995. Hence a ISO/IEC 11801:2002 Category 5 jumper is equivalent to a TIA/EIA 568 Category 5e jumper.

Based on this I think this comment should be rejected. The rejection should state that a ISO/IEC 11801:2002 Category 5 jumper is equivalent to a TIA/EIA 568 Category 5e jumper.

Regards,
David"

Cl **33** *SC* **5.5** *P* **75** *L* **10** # 20

LANDRY, MATTHEW SILICON LABS

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

Reference to IEC 11801 Edition 2. What is this? Any relation to ISO/IEC 11801:1995?

Reference to IEC 61156-1 does not contain a year.

SuggestedRemedy

Fix these references as appropriate.

Proposed Response *Response Status* **O**

11801:2002, see 233, 203

not sure of 61156-1

Cl **33** *SC* **6** *P* **76** *L* **10** # 176

Diab, Wael Broadcom

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

I believe that the text as it stands now was reviewed by the adhoc and was accepted by comments on D0.9 so the editor's note can be removed.

SuggestedRemedy

Please remove the editor's note

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **6.1.1.1** *P* **76** *L* **44** # 51

Jetzt, John Avaya, Inc.

Comment Type **E** *Comment Status* **D** *ez*

Amend bit numbers in heading.

SuggestedRemedy

"33.6.1.1.1 Reserved bits (11.15:6)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **Table 33-5** *P* **77** *L* **10** # 204

Diab, Wael Broadcom

Comment Type **TR** *Comment Status* **D** *L2 adhoc*

Bit 11.4 does not accurately reflect the changes agreed to from the last meeting. 11.4 should simple represent Physical Layer Classification and not 2-Event classification. Presumably the PSE will implement a physical classification scheme, the DLL can then be enabled. Whether it is a 1-event or 2-event does not matter within this context.

SuggestedRemedy

Either:
- Drop 2-event from the bit name so that it is simply Physical Layer Classification

OR

- Add an extra bit from the reserved field to represent 1-event physical layer classification. If this is done, there now needs to be restriction on what happens if both 2-event and 1-event are asserted. For this reason, the commenter prefers the first suggested remedy.

Proposed Response *Response Status* **O**

defer to L2

Cl **33** *SC* **Table 33-15** *P* **77** *L* **11** # 113

Darshan, Yair Microsemi Corporation

Comment Type **T** *Comment Status* **D** *L2 adhoc*

Enable 1-Event Physical layer classification is missing from control register

SuggestedRemedy

Option 1: Define "0" as 1-Event classification for Type 2 PSE.
Option 2: Add additional bit for defining 1-Event classification for Type 2 PSE.

Proposed Response *Response Status* **O**

defer to L2

Cl **33** *SC* **6.1.1.1b** *P* **77** *L* **38** # 205

Diab, Wael Broadcom

Comment Type **TR** *Comment Status* **D** *L2 adhoc*

Bit 11.4 does not accurately reflect the changes agreed to from the last meeting. 11.4 should simple represent Physical Layer Classification and not 2-Event classification. Presumably the PSE will implement a physical classification scheme, the DLL can then be enabled. Whether it is a 1-event or 2-event does not matter within this context.

SuggestedRemedy

Either:
- Drop 2-event from the bit name so that it is simply Physical Layer Classification

OR

- Add an extra bit from the reserved field to represent 1-event physical layer classification. If this is done, there now needs to be restriction on what happens if both 2-event and 1-event are asserted. For this reason, the commenter prefers the first suggested remedy.

This applies to the entire subsection

Proposed Response *Response Status* **O**

defer to L2

Cl **33** *SC* **6.1.2.1b** *P* **78** *L* **50** # 207

Diab, Wael Broadcom

Comment Type **TR** *Comment Status* **D** *L2 adhoc*

Bit 12.13 does not accurately reflect the changes agreed to from the last meeting. 12.13 should simply represent Physical Layer Classification and not 2-Event classification. Whether it is a 1-event or 2-event does not matter within this context.

SuggestedRemedy

Either:
- Drop 2-event from the bit name so that it is simply Physical Layer Classification

OR

- Add an extra bit from the reserved field to represent 1-event physical layer classification. If this is done, there now needs to be restriction on what happens if both 2-event and 1-event are asserted. For this reason, the commenter prefers the first suggested remedy.

This applies to the entire subsection

Proposed Response *Response Status* **O**

defer to L2

Cl **33** *SC* **Table 33-16** *P* **79** *L* **10** # 206

Diab, Wael Broadcom

Comment Type **TR** *Comment Status* **D** *L2 adhoc*

Bit 12.13 does not accurately reflect the changes agreed to from the last meeting. 12.13 should simply represent Physical Layer Classification and not 2-Event classification. Whether it is a 1-event or 2-event does not matter within this context.

SuggestedRemedy

Either:
- Drop 2-event from the bit name so that it is simply Physical Layer Classification

OR

- Add an extra bit from the reserved field to represent 1-event physical layer classification. If this is done, there now needs to be restriction on what happens if both 2-event and 1-event are asserted. For this reason, the commenter prefers the first suggested remedy.

Proposed Response *Response Status* **O**

defer to L2

Cl **33** *SC* **2.2** *P* **8** *L* **50** # 100

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **D** *4P*

The standard should not preclude implementations that are using both alternative A and B due to the following reasons:
a) It is out of scope of the standard to limit implementations.
b) There are no interoperability issues if PD gets power from two 2 pairs power source. It is the load responsibility (PD) to meet the 2P specification for each 2P. Implementation methods are out of scope of the standard.
c) It is economically feasible as shown in numerous presentations
d) It is technically feasible as shown by the same presentations.
e) There are products in the market that already is using the 2 x 2P implementation e.g. High power Midspan that is using 2 x 2P and applications that are using 2P power coming from the Switch and additional power delivered from Midspan.
f) There is huge market for higher power then 30W over 2P.
g) There is no additional cost issue. The $/watt cost is even lower then in 2P system as shown in previous meeting presentations.
h) For outdoor applications, temperature rise issues of the cables when using 60degC cabling system grade can be solved if the same power is delivered over 2 x 2P which is an easy solution for outdoor applications.
i) Users will do it any way to utilize the full capability of the existing infrastructure.
J) In previous meeting switch and PHY vendors wanted the ability to use the same cable which consists of 4 pairs to support two PDs that each one of them is connected to a 2P system. The current text precludes using this feature.

SuggestedRemedy

Change from:
"A PSE shall implement Alternative A or Alternative B, or both, provided the PSE meets the constraints of 33.2.3. Implementers are free to implement either alternative or both. While a PSE may be capable of both Alternative A and Alternative B, PSEs shall not operate both Alternative A and Alternative B on the same link segment simultaneously."

To:
"A PSE shall implement Alternative A or Alternative B, or both, provided the PSE meets the constraints of 33.2.3. Implementers are free to implement either alternative or both."

In addition in 33.3.1 page 33 line 42 delete "note allowed by" and replace with "out of scope of"

Proposed Response *Response Status* **O**

see 151

Cl **33** *SC* **6a** *P* **82** *L* **10** # 21

LANDRY, MATTHEW — SILICON LABS

Comment Type **E** *Comment Status* **D** *ez*

There is an inline note that should really be an Editor's Note.

SuggestedRemedy

Make it an Editor's Note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **6a** *P* **82** *L* **12** # 52

Jetzt, John — Avaya, Inc.

Comment Type **E** *Comment Status* **D** *ez*

Fix run-on sentence.

SuggestedRemedy

" ... using management frames. These functions are ..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **6a** *P* **82** *L* **15** # 208

Diab, Wael — Broadcom

Comment Type **TR** *Comment Status* **D** *L2 adhoc*

This sentence does not accurately reflect the resolution to comment #268. It relfects part of the resolution to the comment. It does not address the timeout aspects.

SuggestedRemedy

Please append the followind sentence. If a loss of management frame communcation persists past the TBD1 LLDP timeout and TBD2 timeout, the PSE may remove power.

The TBD1 and TBD2 are work items for the L2 adhoc per comment #268.

Proposed Response *Response Status* **O**

defer to L2

Cl **33** *SC* **6a** *P* **82** *L* **16** # 157

McCormack, Michael — Texas Instruments

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

802.1AB provide a time to live TLV, which is supposed to determine how long other TLVs persist. Loss of cummincations as the time limit for persistance seems a violation of 802.1AB.

SuggestedRemedy

Change "upon loss of management frame communications" to "upon expiration of the Time to Live TLV"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **6a** *P* **82** *L* **18** # 82

Johnson, Peter — Sifos Technologies

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

This is a suggestion to the Ad-Hoc regarding Layer 2 timeout behavior. If Type 2 PSE's powering Type 2 PD's (with > 15.4 watts) are allowed to drop power after some period of non-response, this will lead to a testability dilemma. Long duration packet flow testing of PSE ports operating in Class 4 power ranges would then require layer 2 participation of the test equipment to keep power alive. While a PoE tester might handle layer 2 emulation to initiate power up and initialize classification, switching over to a packet tester for packet flow analysis could lead to power drop. Ideally, any process to work around the timeout should not be dependent on an out-of-band management interface to the PSE.

SuggestedRemedy

The protocol should either by default or by embedded in-band request allow for an override of layer 2 timeouts until power is removed through overload or disconnect mechanisms.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Comment results in no change to the spec, just a request for the AdHoc to consider something. Proper way is NOT to comment on this but participate in the L2 AdHoc.

Cl **33** *SC* **6a** *P* **82** *L* **18** # 209

Diab, Wael — Broadcom

Comment Type **TR** *Comment Status* **D** *L2 adhoc*

The exact timeout numbers for the L2 numbers need to be defined by the adhoc. This comment is intended to be a placeholder for that work.

SuggestedRemedy

See comment

Proposed Response *Response Status* **O**

defer to L2

Cl **33** *SC* **6a.1** *P* **82** *L* **31** # 22

LANDRY, MATTHEW — SILICON LABS

Comment Type **E** *Comment Status* **D** *L2 adhoc*

There is nothing in Annex 33F.

SuggestedRemedy

Eagerly await generated content for Annex 33F from L2 ad hoc.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accepting comment results in no change to text

Cl **33** *SC* **6a.1.1** *P* **82** *L* **41** # 177

Diab, Wael — Broadcom

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

In light of our decision to own our own TLVs then we no longer need the reference to ANSI.

SuggestedRemedy

Please turn the first sentence into an editor's note that is to be removed prior to publication:

Editor's note: The minimum status TLV definition follows the format defined in ANSI/TIA-1057 for Media Endpoint Discovery.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **6a.1.2** *P* **83** *L* **30** # 41

Jetzt, John Avaya, Inc.

Comment Type **T** *Comment Status* **D** *ez*

Table 33-18: Fix description of Byte 7.

SuggestedRemedy

" ... same way as actual power type/source/priority, ..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **6a.1.3** *P* **83** *L* **5** # 158

McCormack, Michael Texas Instruments

Comment Type **TR** *Comment Status* **D** *L2 adhoc*

Byte 1 is wrong, it shows a value of 127 for the entire byte.

SuggestedRemedy

Change Byte 1 to
TLV Type (bits 7 - 1) = 127 - organizationally specific type
TLV length (bit 0) = MSB of length of information string
Change Byte 2 to
TLV length (bit 7 to 0) = bits 7 to 0 of length of information string

Repeat changes for other TLVs

Proposed Response *Response Status* **O**

defer to L2

Cl **33** *SC* **6a.2.2** *P* **84** *L* **14** # 119

Vetteth, Anoop Cisco

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

Section 33.2.8.11a (Continuous output power for PSE) refrences section 33.6a.2.2 for the DLL class power. Neither section accouts for the cable losses.

SuggestedRemedy

Add text that would require the PD to report the total power it is likely to draw from the PSE which would include the Cable losses.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

agreed, PD should report power drawn from the PSE at the PSE PI port. This would include cable loss. PD will have to add worst case cable loss to power number and report that to PSE.

Need to wordsmith the text???

Cl **33** *SC* **6a.2.4** *P* **84** *L* **32** # 23

LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **D** *ez*

The statement that "other parameters will be defined after adoption by the Task Force" should really be an Editor's Note.

SuggestedRemedy

Make it an Editor's Note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **6a.4** *P* **86** *L* # 60

Vetteth, Anoop Cisco

Comment Type **TR** *Comment Status* **D** *L2 adhoc*

Figure 33-20
It is not clear from the text whether the initialize state is prior to Power-ON or prior to DLL classification (after Power-ON)

SuggestedRemedy

Explain in text which of the two cases initialize state stands for

Proposed Response *Response Status* **O**

defer to L2

Cl **33** *SC* **Figure 33-20** *P* **86** *L* **10** # 210
Diab, Wael Broadcom

Comment Type **TR** *Comment Status* **D** *L2 adhoc*

A priority needs to be defined between on the exit condition from the RUNNING state. As it stands it is possible for both these conditions to be asserted.

SuggestedRemedy

For a PSE, I would recomend that the Local Request takes precedence. For a PD the remote request should take precedence.

Proposed Response *Response Status* **O**

defer to L2

Cl **33** *SC* **Figure 33-20** *P* **86** *L* **40** # 214
Diab, Wael Broadcom

Comment Type **TR** *Comment Status* **D** *L2 adhoc*

The state machine does not accurately reflect the resolution to comment #268. It relfects part of the resolution to the comment. It does not address the second timeout aspect.

SuggestedRemedy

The state machine should show the optional power removal after the second timeout.

Proposed Response *Response Status* **O**

defer to L2

Cl **33** *SC* **Figure 33-20** *P* **86** *L* **40** # 211
Diab, Wael Broadcom

Comment Type **TR** *Comment Status* **D** *L2 adhoc*

It is a noble goal to try and keep the same state machine for both sides of the link (PSE and PD), however, we fundementally have a different behavior. Whether we do this by renaming the same variables or not, it still is 2 different machines.

SuggestedRemedy

Please replicate Figure 33-20 again and label the first for a PSE and the second for a PD. We can maintain the same structure for both but this will allow clear analysis of any conflict conditions that may arise

Proposed Response *Response Status* **O**

defer to L2

Cl **33** *SC* **6a.4** *P* **86** *L* **5** # 24
LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **D** *ez*

There is a stray '.'

SuggestedRemedy

Get rid of it.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **6a.4** *P* **87** *L* # 61
Vetteth, Anoop Cisco

Comment Type **TR** *Comment Status* **D** *L2 adhoc*

There are three scenarios due to DLL fault condition
- Data link not established after Power-ON resulting in systems using the power values estabilised over physical layer classification
- Loss in L2 communication resulting in systems reverting to last acknowledged DLL power value
- Loss in L2 communication or Data Link not established after Power-ON resulting in PSE optionally power-cycling the PD after TBD time period
These 3 scenarios have not been clearly mentioned in the text

SuggestedRemedy

Mention the 3 scenarios in text.

Proposed Response *Response Status* **O**

defer to L2

Cl **33** *SC* **6a.4.1** *P* **87** *L* **12** # 178
Diab, Wael Broadcom

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

The collision mechanism is a work item of the L2 adhoc per comment 267 of the D0.9 database. As such the text has not been accepted and is being worked on.

SuggestedRemedy

Please mark this paragrtaph on the collision with an editor's item that it is a place holder until we complete work on it.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **6a.4.1** *P* **87** *L* **19** # 212

Diab, Wael Broadcom

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

Per the classification baseline, the PSE treats the PD as a Type 1 Class 4 until the L2 engine is up.

SuggestedRemedy

Please append the following sentence to line 14: In the event the classification that is returned from the Physical Layer is Class 4, then the PSE treats the PD as a Type 1 Class 4 PD until the DLL classification engine completes.

Proposed Response *Response Status* **O**

only if the PSE used 1-event, if it used 2-event then it is type 2 class 4.
page 87 line 14 does not seem like the right location - where??? Line 19 as the comment line states?

Cl **33** *SC* **6a.4.1** *P* **87** *L* **22** # 213

Diab, Wael Broadcom

Comment Type **TR** *Comment Status* **D** *L2 adhoc*

This paragrpah does not accurately reflect the resolution to comment #268. It relfects part of the resolution to the comment. It does not address the second timeout aspect.

SuggestedRemedy

Please append the following sentence:

Upon a further timeout of TBD msec where the loss of DLL communication persists, the PSE may remove power from the PD.

Proposed Response *Response Status* **O**

defer to L2