

IEEE P802.3at D4.0 PoEplus comments

Cl 25 SC 25.4.4a.1 P19 L51 # 1 [redacted]  
 Darshan, Yair Microsemi Corporation

Comment Type **G** Comment Status **A** EZ

Draft D4  
 Figure 25-1 title:  
 The title use "test fixture" and the text in Note 1 use "test circuit"  
 Let's use the same term in both.

*SuggestedRemedy*

To pick one of the terms and synchronize between Figure 25-1 title and Note 1 text.

Response Response Status **C**

ACCEPT IN PRINCIPLE.

OBE 31

Cl 33 SC 33.2.4.4 P44 L21 # 2 [redacted]  
 Darshan, Yair Microsemi Corporation

Comment Type **ER** Comment Status **A** EZ

Draft D4  
 There is no such term PD Inrush.  
 It should be "PD Inrush current"

*SuggestedRemedy*

Lines 21 and 22 (two occurrences): Replace "PD inrush" with "PD inrush current"

Response Response Status **C**

ACCEPT IN PRINCIPLE.

Assume this is page 45.

Accept the suggestion.

Cl 33 SC 33.2.4.4 P45 L22 # 3 [redacted]  
 Darshan, Yair Microsemi Corporation

Comment Type **ER** Comment Status **A** pics

Draft D4  
 The wording of "Using only this PI voltage information  
 is insufficient" is confusing.  
 Discussion:  
 If it "is insufficient" as the text says then why we allow it? it may cause interoperability  
 problems...  
 The reason why we allow it is to continue to support legacy which work fine so using the  
 wording "is insufficient" tells the reader that we know for a fact that in all cases that this  
 method is used it is not working which is also not true.

*SuggestedRemedy*

Change "is insufficient" to  
 Option a) : "may be insufficient"  
 Option b) : "in some cases is insufficient"  
 Option c) : "in some cases may be insufficient"  
 Option d) : Other equivalent wording..

Response Response Status **C**

ACCEPT IN PRINCIPLE.

OBE 34

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.4.6 P49 L14 # 4  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status A pics

Draft D4  
 1. do\_short\_detect function detects short circuit condition and not overload condition. So we need to fix the text (it was copied from do\_overload\_detect..)  
 2. However overload condition may be many scenarios that is ended with "short circuit" condition from the PSE point of view examples:  
 1. Very high load that corresponds to very low output resistance load < 1 ohms.  
 2. Overload that corresponds to current > lcut\_max  
 All of the above may be considered as overload conditions or "short circuit" condition from the PSE point of view.  
 I believe that short circuit doesn't mean zero ohms.  
 As a result do\_short\_detect function detects short circuit and overload as well. In this case is very much depends on system specific implementation. (All short circuits are overload as well but not all overload scenarios are short circuit conditions. It depends by the PSE output impedance as well. The difference between do\_short\_detect and do\_overload\_detect is a) the time TLIM or TOVLD b) Current thresholds c) Enforcement d) different states which requires two separate functions)

SuggestedRemedy

Change from:  
 "do\_short\_detect  
 This function monitors the PSE output current and detects an overload condition for TLIM within a sliding window."  
 To:  
 "do\_short\_detect  
 This function monitors the PSE output current and detects a short circuit condition or an overload condition for TLIM within a sliding window."

-----  
 (All short circuits are overload as well but not all overload scenarios are short circuit conditions. It depends by the PSE output impedance as well. The difference between do\_short\_detect and do\_overload\_detect is a) the time TLIM or TOVLD b) Current thresholds c) Enforcement d) different states which requires two separate functions)

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE 39

Cl 33 SC 33.2.4.6 P49 L19 # 5  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status A pics

Draft D4  
 If the result of the do\_short\_detect function is TRUE, it doesn't necessarily mean that the PSE has detected a current limit condition which is true only to a specific implementation. The PSE may detect TRUE condition by only detecting that the current pass some threshold without activating current limit circuitry which is allowed by figure 33-15.

SuggestedRemedy

Change from:  
 "Values:  
 TRUE: The PSE has detected a current limit condition.  
 FALSE: The PSE has not detected a qualified current limit condition."  
 To:  
 "Values:  
 TRUE: The PSE has detected a short circuit condition.  
 FALSE: The PSE has not detected a qualified short circuit condition.  
 Short circuit current is defined as any current above lpeak as illustrated in figure 33-15"

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE 41

Cl 33 SC 33.2.6.1 P53 L48 # 6  
 Darshan, Yair Microsemi Corporation

Comment Type E Comment Status A EZ

Draft D4.0  
 remove the word "and"

SuggestedRemedy

remove the word "and" from "..(as specified in ..)."

Response Response Status C

ACCEPT.

OBE 43

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Cl 33 SC 33.2.6.1 P53 L50 # 7  
 Darshan, Yair Microsemi Corporation

Comment Type ER Comment Status A pics

Draft D4  
 We can define only parameters that are measurable at the PI.  
 E.g. we can not define behaviour of power supply or other circuits inside the PSE or PD.  
 See multiple locations in the spec that explicitly state this concept.  
 Similarly when PSE is evaluating the presence of valid PD as stated in line 50, it is done by at least two measurements with Vport and not with Vdetect.  
 Vdetect is internal variable. Vport is the variable which we have access to it.  
 It is true that Vport is function of Vdetect but Vdetect is not a variable that is define in one of the tables in the spec.  
 As aresult Vdetect should be Vport.

*SuggestedRemedy*

1. Delete Vedetect from figures 33-12 and 33-13 and leave the DC supply part unlabeled if it is permitted by the rules.
2. In line 50: Replace "Vdetect" with "Vport"

Response Response Status C

ACCEPT IN PRINCIPLE.

1. Delete Vdetect from figures 33-12 and 33-13 and leave the DC supply part unlabeled.
2. In line 50: Replace "Vdetect" with "Vport"

See 46.

Instruct the editor to adjust the PICs to match these changes.

Cl 33 SC 33.2.8.2 P58 L25 # 8  
 Darshan, Yair Microsemi Corporation

Comment Type ER Comment Status A

DRAFT D4.0 (SA), the note in lines 25-26:  
 The text:  
 "NOTE: In a properly operating system, the port may or may not discharge to the VMark range due to the combination of channel capacitance and PD current loading."  
 is not fully accurate due to the fact that it is not only the function of the channel capacitance. It is also a function of the PD capacitance.

*SuggestedRemedy*

Change from:  
 "NOTE--In a properly operating system, the port may or may not discharge to the VMark range due to the combination of channel capacitance and PD current loading."  
 To:

"NOTE--In a properly operating system, the port may or may not discharge to the VMark range due to the combination of channel and PD capacitance and PD current loading."  
 -----

(The minimum PD capacitance during detection and classification (Table 33-14 =0.05uF) is at least 5 times higher than the channel capacitance so the channel capacitance is only 20% of the minimum system capacitance at the above operating mode.)

Response Response Status C

ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.9 P60 L53 # 9  
 Darshan, Yair Microsemi Corporation

Comment Type ER Comment Status A pics

Draft D4.0  
 Table 33-11 item 15, additional information column:  
 The spec requires that Trise will be measured from 10% to 90% of Vport however Vport is a parameter that is defined in Table 33-11 item 1 which is a number from 44V to 57V for Type 1 and 50 to 57V for type 2.  
 Due to the fact that the specification refer to Trise which is the entire port voltage transition from its minimum value to its maximum valuse and not to 10% or 90% of 44V to 57V which is Vport, the spec requires some clarification.  
 The correct definition is "From 10% to 90% of the entire port voltage range during turn on at POWER\_UP state" or equivalent wording to correct the above error.

*SuggestedRemedy*

Change the text in the "additional information" column from:  
 "From 10% to 90% of Vport"  
 To: "From 10% to 90% of the entire port voltage range during turn on at POWER\_UP state"

- (This change fix the problem in a way that allows port voltage range to be from:  
 a) 0V to Vport (Vport as specified in Table 33-11 item 1)  
 b) Voff to Vport (Voff is specified in Table 33-11 item 17)  
 c) Vmark to Vport  
 d) Vclass to Vport  
 e) Any minimum voltage at the port to Vport  
 -----

Response Response Status C

ACCEPT IN PRINCIPLE.

Change the text in the "additional information" column from:  
 "From 10% to 90% of Vport"

To: "From 10% to 90% of the voltage difference at the PI in POWER\_ON state from the beginning of POWER\_UP"

Cl 33 SC 33.2.9.2 P61 L49 # 10  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status A pics

Draft D4.0  
 We change Imin2 and Imin 1 to Imin.  
 Change Imin2\_max to Imin\_max.

*SuggestedRemedy*

1. Change Imin2\_max to Imin\_max.
2. Also in 33.2.9.4 p. 62 line 13.

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE 149

Cl 33 SC 33.3.4 P73 L54 # 11  
 Darshan, Yair Microsemi Corporation

Comment Type ER Comment Status A EZ

Draft D4.0  
 Table 33-14, Input Inductance.  
 The reader may assume that it can be inductance in parallel to the port which is not the case (otherwise port will be shorted at DC voltage). This is "series input inductance".

*SuggestedRemedy*

Replace Table 33-14 item "Input Inductance" with "Series input inductance"

Response Response Status C

ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.3.7 P77 L22 # 12  
 Darshan, Yair Microsemi Corporation

Comment Type ER Comment Status A EZ

Draft D4.0  
 We had some cleaning work in previous drafts in order to use state machine terms.  
 Here is an other case that need some editing.  
 Normal Powering state is "POWER\_ON" when we are refering to PSE and  
 "MDI\_POWERx" when we are refering to PD.  
 Since this is a PD spec let's use the right term

*SuggestedRemedy*

Replace the text in item 9 Table 33-18 from:  
 "...during normal powering state"  
 to "...during MDI\_POWERx state"

Response Response Status C

ACCEPT.

Also this term shows up in the PICs PD41, P120 L25.

Cl 33 SC 33.4.8 P87 L51 # 13  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status A

Draft D4.0 , 33.4.8, page 87 line 51  
 Comment:  
 There is already a requirement in the specification that guarantees the operation of 100BT  
 ALT A Midspans.  
 We can add it as alternative to 33.4.8 text.

Rational:

(1) 33.4.8 requires that:

Alternative A Type 2 Midspan PSEs that support 100BASE-TX  
 shall enforce channel unbalance currents less than or equal to  
 Type 1 Iunb (see Table 33-11)."

Which means:

Reducing Iunb to Type 1 levels increase PD Type 2 OCL to  
 350uH minimum i.e make the system as 350uH system.

(2) Now, prior to changing OCL from 350uH to 120uH in the Switch and PD, we define a  
 Transfer Function (Eq. 33-19 in 33.4.9.2) that 100BT ALT A Midspans has to meet in order  
 to work in 100BT ALT A Type 1 and Type 2 systems that uses OCL of 350uH hence this  
 equation was built for 350uH systems.

It was approved and supported by a motion by Yair Darshan and David Law.

See motion in: [http://www.ieee802.org/3/at/public/2008/05/minutes\\_0508.pdf](http://www.ieee802.org/3/at/public/2008/05/minutes_0508.pdf)

See technical data attached to the motion in:

<http://www.ieee802.org/3/at/public/2008/05/index.html>

(3) Both requirements (1)+(2) above, 33.4.8 and 33.4.9.2 are equivalent alternatives i.e.  
 both of them supporting 350uH system.

As a result 33.4.8 can be updated as follows:

"Alternative A Type 2 Midspan PSEs that support 100BASE-TX shall enforce channel  
 unbalance currents less than or equal to Type 1 Iunb (see Table 33-11) or meet 33.4.9.2.

The rest is implementation that we don't care.

(Please see attached presentation "ALT A Midspan requirements - updating the spec" for  
 more details in the IEEE802.3at March 2009 site)

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*SuggestedRemedy*

Change from:

"Alternative A Type 2 Midspan PSEs that support 100BASE-TX shall enforce channel  
 unbalance currents less than or equal to Type 1 Iunb (see Table 33-11).

To:

"Alternative A Type 2 Midspan PSEs that support 100BASE-TX shall enforce channel  
 unbalance currents less than or equal to Type 1 Iunb (see Table 33-11) or meet 33.4.9.2.

Response Response Status C

ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 25 SC 25.4.4a.1 P19 L51 # 14  
 Darshan, Yair Microsemi Corporation

Comment Type G Comment Status A EZ

Draft D4.0 Note 1 page 19 line 51 says:  
 "NOTE 1-The value of the 100 ohm termination resistor can be adjusted to compensate for the test circuit resistance.  
 The test circuit resistance should exceed 2 kohm."  
 Following my objective of clarifying the text in order to reduce the amount of test conditions interpretations I have few questions that may be needed to be clarified:  
 1. What is "the test circuit resistance" which part of figure 25-1 is it?  
 Is it the PHI output resistance that determines Ibias?  
 If this is the intention then modify the text to be:  
 "NOTE 1-The value of the 100 ? termination resistor can be adjusted to compensate for the test circuit resistance which is defined as  $|v1-v2|/Ibias$ . The test circuit resistance should exceed 2 k?."  
 See attached "modified Figure 25-1" proposal for clarifying the issue.  
 2. The text " ..can be adjusted to compensate for ..": It is not clear why a compensation is required. If the intent is to adjust the 100 ohm in order to compensate the effect of the 2 2Kohm on the total equivalent termination resistance then modify the text to:  
 "NOTE 1-The value of the 100 ? termination resistor can be adjusted to compensate for the effect of the test circuit resistance which is defined as  $|v1-v2|/Ibias$ , on the total equivalent termination resistor. The test circuit resistance should exceed 2 k?."  
 See attached "modified Figure 25-1" proposal for clarifying the issue.

SuggestedRemedy

Group to clarify it.  
 My proposal is:  
 1. Add V1, V2 labels to Ibias terminals in Figure 25-1 (See attached drawing "modified figure 25-1".  
 2. Modify Note 1 text to be:  
 "NOTE 1-The value of the 100 ohm termination resistor can be adjusted to compensate for the effect of the test circuit resistance which is defined as  $|v1-v2|/Ibias$ , on the total equivalent termination resistor. The test circuit resistance should exceed 2 kohm."

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE 30, 219, 214

Cl 33 SC 33.3.5.2.1 P75 L51 # 15  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status D

We need to limit the time required to PD current to get to Imark from Iclass otherwise the PSE may be in overload if the PSE sets its current limit from Iclass\_lim to Imark\_lim faster than PD current gets to Imark range.

SuggestedRemedy

- Change the text from:  
 "When the PD is presenting a mark event signature as shown in the state diagram of Figure 33-18, the PD shall draw IMark as defined in Table 33-17 and present a non-valid detection signature as defined in Table 33-15."  
 To:  
 "When the PD is presenting a mark event signature as shown in the state diagram of Figure 33-18, the PD shall draw IMark within Tmark\_st as defined in Table 33-17 and present a non-valid detection signature as defined in Table 33-15."  
 2. Add the parameter Tmark\_st to Table 33-17 with the following data:  
 Item 3.1  
 Parameter: Imark stabilization time  
 Symbol: Tmark\_st  
 Units: Min=0, Max=1msec (Yair:the number is a proposal, can be other practical number to be determined by PD vendors)  
 Additional Information column: See 33.3.5.2.1  
 3. Add the following text line 52 PAGE 75:  
 Tmark\_st is the time from Vmark\_th to the time when Imark is within its operating range.

Proposed Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

Since the PSE is assumed largely a sourcing device (implicit in the large time to discharge the port in idle state) and since it was not our intention to mandate a discharge function in the PSE, you can assume the PSE turns his port regulation to Vmark @ I mark in advance of the voltage actually entering this region.

The PD requirement for mark voltage makes no exception for "just a short time" it is absolute. The standard requires only Imark within the Imark voltage range. No change is required.

From a practical standpoint, the standard is not requiring an infinitely fast PD detector - a practical one is possible. The PD can switch (or begin to) anywhere between Vclass min and Vmark max, and in addition it has margin down to 6.9V. So it has up to 10 us (dv/dt = 40mA / .1uf = 400e3V/s or .4V/us) to detect and turn off Iclass (assume 4V transition

IEEE P802.3at D4.0 PoEplus comments

region)!

This is not theoretical - it works! Multiple manufacturers claim to have compliant devices.

CI 33 SC 33.2.9.5 P62 L33 # 16

Heath, Jeffrey Linear Technology

Comment Type GR Comment Status A EZ

(this comment may have been accidentally submitted twice)  
 PDPeak\_PD referent to table 33-17 appears to be incorrect

SuggestedRemedy

Line 33 is:  
 PPeak\_PD is the peak power a PD may draw for its class; see Table 33-17  
 New Text for Line 33:  
 PPeak\_PD is the peak power a PD may draw for its class; see Table 33-18

Response Response Status C

ACCEPT.

CI 33 SC 33.3.5.2 P75 L43 # 17

Heath, Jeffrey Linear Technology

Comment Type TR Comment Status A

\*\*\* Comment submitted with the file 30204700024-MinorProblemwithPDRResetThresholdandResetVoltage.pdf attached \*\*\*

VReset\_th Minimum was changed between draft 3.1 and 3.3 and appears to be in error (From Clay Stanford). See attached File "Minor Problem with PD Reset Threshold and Reset Voltage.pdf"

SuggestedRemedy

Old VReset\_th Min. Value: 2.7 V  
 New VReset\_th Min. Value: 2.8 V

Response Response Status C

ACCEPT IN PRINCIPLE.

P75, L43 change Min entry for T33-17, Item 5 to 2.81V and change Max entry for T33-17, Item 6 to 2.81V.

-----  
 This change was made by comment 100 against D3.1. Comment follows:

The VReset\_th min and VReset max should correspond with the minimum detection voltage, as this threshold dictates when the PD transitions out of detection into the NOT\_MDI\_POWERED state.

Otherwise, it is possible for a PD to see a valid detection voltage, but churn through the states because of the VReset and VReset\_th overlap.

Sugg remedy: Make both VReset max and VReset\_th min 2.7V.

Response: ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.3.3.5 P73 L1 # 18  
 Darshan, Yair Microsemi Corporation

Comment Type ER Comment Status D PD State Machine

Draft D4.0  
 The "Note" in line 1:  
 "NOTE - DO\_CLASS\_EVENT3 creates a defined behavior for a Type 2 PD that is brought into the classification range repeatedly."  
 We need to clarify how PD is brought to such scenario i.e. this is not due to the PD operation.

*SuggestedRemedy*

Append the text "by the PSE." to the end of line 2 on page 73 so the new text will be:  
 "NOTE--DO\_CLASS\_EVENT3 creates a defined behavior for a Type 2 PD that is brought into the classification range repeatedly by the PSE."

Proposed Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

While the recommended statement would not be incorrect, the basis of the standard is always that the PSE drives the link voltage, the PD drives the link current unless a special or fault condition occurs. That is, the PD does not back-drive the PI. Adding un-necessary words needlessly complicates the standard.

Cl 33 SC 33.2.8 P57 L27 # 19  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status R

Draft D4.0  
 The case of a PSE that successfully complete classification but due to system decision decide to not power the PD or decides to go to IDLE and start all from the beginning or to do classification again as long as Tpon is not done yet is missing from the text.  
 (We allow system to do detection and not continue to next state just because...system wants and we wanted this ability from any point in the state machine..)

*SuggestedRemedy*

Add the following text after line 30 in page 57:  
 "PSE that successfully completed classification may decide due to system decision, to:

- a) Go to IDLE state
- b) Not power the PD
- c) Repeat classification without doing detection again as long as Tpon timer is not done yet"

Response Response Status C

REJECT.

Tabled, Yair to provide justification.

The state machine presently lets you redo detection followed by classification whenever desired as long as you are not recovering from an error condition



IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.8 P55 L35 # 20  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status D

Draft D4.0 (SA)  
 We require PSE to maintain Vmark prior to Startup for Type 2 system.  
 If during Mark event 2 or even park event 1 PD was disconnected for a short period of time (e.g. less than 300msec ...) the PD lost its memory and will be powered as class 0 even if PSE did what he was required and disconnect time was less than 300msec  
 Discussion:  
 In Type 1 system this case is fully defined.  
 t<300msec : system operates  
 300 - 400msec : may or may not disconnected  
 >400msec : must be disconnected.  
 Here the problem in Type 2 is for t<300msec which meets disconnect criteria i.e. power should be on per the classification results BUT classification results were lost as PD was disconnected...

*SuggestedRemedy*

To instruct the editor add the following text to 33.2.8 at the relevant location:  
 "The behaviour of A Type 2 PD that was disconnected from a Type 2 PSE during Mark event is undefined and out of scope of this standard"

Proposed Response REJECT. Response Status Z

This comment was WITHDRAWN by the commenter.

It is already undefined and out of scope. There is no need to enumerate all the things undefined and out of scope.

Cl 33 SC 33.3.3.5 P73 L1 # 21  
 Darshan, Yair Microsemi Corporation

Comment Type GR Comment Status D PD State Machine

Draft D4.0 (SA)  
 The "Note" in line 1:  
 "NOTE--DO\_CLASS\_EVENT3 creates a defined behavior for a Type 2 PD that is brought into the classification range repeatedly."  
 DO\_CLASS\_EVENT3 should be DO\_CLASS\_EVENT\_n due to the fact that DO\_CLASS\_EVENT3 will happen when PSE is going to startup and passing classification range once and when PD is passing Voff, Port voltage may drop to any value down to Vmark\_min and voltage will ramp again (PSE is charging PD input capacitance) while crossing classification operating range hence DO\_CLASS\_EVENT4.  
 So for the general case we need to replace NOTE--DO\_CLASS\_EVENT3 with NOTE--DO\_CLASS\_EVENT\_n while n is the number of occasions when Vport is passing through classification range as a result of PSE - PD interactions.

*SuggestedRemedy*

1. Replace:  
 "NOTE-DO\_CLASS\_EVENT3 creates a defined behavior for a Type 2 PD that is brought into the classification range repeatedly."  
 With:  
 "NOTE-DO\_CLASS\_EVENT\_n creates a defined behavior for a Type 2 PD that is brought into the classification range repeatedly (n times) by the PSE."
2. Update Figure 33-18 line 42, DO\_CLASS\_EVENT3 label  
 Alternatively, group to show how the above case is covered by the current state machine, Figure 33-18.

Proposed Response REJECT. Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

The existing DO\_CLASS\_EVENT3 permits multiple cycles.

The transient behavior of the link is not incorporated in the state machine - Vport\_PD is defined as a static value. Thus there is no need to create a lot of extra states.

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Cl 01 SC 1.3 P17 L # 22

Turner, Michelle

Comment Type **GR** Comment Status **A**

802.1AX is cited in the Normative reference clause. It is also cited in a note (informative). It should be cited normatively in text as well.

SuggestedRemedy

Response Response Status **C**

ACCEPT IN PRINCIPLE.

OBE 28

Cl 00 SC 0 P L # 23

Obara, Satoshi

Fujitsu Component LT

Comment Type **E** Comment Status **A**

I can find many "See IEEE802.3, Clause XX" and "See Clause XX" in the draft text.

SuggestedRemedy

Please Unify "See IEEE802.3, Clause XX" into "See Clause XX".

Response Response Status **C**

ACCEPT IN PRINCIPLE.

OBE 179

Cl 00 SC 0 P L # 24

Obara, Satoshi

Fujitsu Component LT

Comment Type **G** Comment Status **R**

For readers' comprehension, please add informative annex which describes relationship between exsiting 802.3af devices and Type1/Type2 devices of 802.3at.

SuggestedRemedy

See my comment

Response Response Status **C**

REJECT.

The Task Force believes that 33.3.2 describes the relationship between Type 1 and Type 2 PDs. Lacking specific text in the Suggested Remedy, there is nothing to include in the draft as an informative annex.

Cl 33 SC 33.4.1 P82 L35 # 25

Thompson, Michael

Pentair Electronic Pac

Comment Type **E** Comment Status **R**

The 60 s requirement in the IEC 60950-1:2001 standard is typically only used for certification testing. Note 1 in section 5.2.2 of IEC 60950-1:2001 says that a 1 s duration can be used for routine testing. Requiring a 60 s duration will add significant testing time to a product.

SuggestedRemedy

2250 V dc for 60 s, applied as specified in subclause 5.2.2 of IEC 60950-1:2001. A 1 s test duration may be used for production testing.

Response Response Status **C**

REJECT.

We do not specify production testing, only interoperability.

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Cl 33 SC 33.2.9.6 P62 L42 # 26  
 Darshan, Yair Microsemi Corporation

Comment Type ER Comment Status R pics

Draft D4.0 (SA):  
 33.2.9.6 Defines the conditions required to meet the specifications for linrush but are not addressing the conditions for meeting Tinrush as well.  
 Tinrush minimum is 50msec which was originally calculated as long as linrush (0.4A to 0.45A) is kept at any port voltage from zero to Vport.  
 If implementer uses items (d) and (e) for Foldback current limit implementation in which PSE is allowed to supply linrush=60mA minimum (and not 0.4 to 0.45A) as long as  $10V \leq V_{port} \leq 30V$  as Tinrush may result with much higher time duration >75msec which is not permitted.  
 Example:  
 If the PD input capacitor is 150uF and PSE uses linrush=60mA from 0V to 30V and 0.4A from 30V to 57V, We get  $T_{inrush} = 150\mu F * (30V / 0.06A + (57V - 30V) / 0.4) = 85ms > 75msec$ . (After 75msec, port must turn OFF).  
 It became worse with higher capacitors value which also supported by this specifications. So the question is: What are the conditions in which Tinrush should be tested.  
 It is obvious that it is the same conditions as linrush is tested i.e. the minimum requirement for the PSE is to test linrush and Tinrush from 30V to Vport if implementer chooses to implement 33.2.9.6 (d) and (e).

SuggestedRemedy

Suggested Remedy:  
 Replace the text of line 42:  
 "The specification for linrush in Table 33-11 shall be met under the following conditions:"  
 With:  
 "The specification for linrush and Tinrush in Table 33-11 shall be met at initial port voltage of at least 30V and under the following conditions:"  
 -----  
 It means that pending the implementation being used it can also be met at port voltage from 0V to Vport but this is not the minimum requirement.

Response Response Status U

REJECT.

Discussed and could not reach consensus, rejected by default

Cl 33 SC 33.3.5.2 P75 L40 # 27  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status D

\*\*\* Comment submitted with the file 30634700024-VmarkvsImarkattypicalconditions.pdf attached \*\*\*

Draft D4.0 Table 33-17 items 3 and 4:  
 Possible interoperability issue:  
 A PSE is allowed to have up to 0.52uF in its output.  
 Cable capacitance is 10nF max for 100m.  
 PD capacitance during detection in 0.12uF max.  
 PD capacitance during classification is undefined. (Worth seperate comment..)  
 Hence total capacitance is 0.65uF at least for the worst case.  
 During Mark Event PD current can be as low as 0.25mA.  
 During Vmark\_th range the current can be any number between 0.25mA to 44mA or to Iclass.  
 Assuming PD vendor use 0.25mA all the way for Vmark\_th range then the voltage at the port during Mark event for  $TCLE1/2\_min = 6msec$  will be:  
 $V_{class} - 0.25mA * 6msec / 0.65uF = V_{class} - 2.304V$ .  
 1. Now if Vclass is 20.5V than port voltage at mark event of 6msec is 18.2V so PD can not identify the 2nd class event.  
 2. If Vclass is 18V (Middle range of Vclass) than port voltage at mark event of 6msec is 15.8V so again PD can not identify the 2nd class event.  
 3. If Vclass is 14.5V (lower range of Vclass) than port voltage at mark event of 6msec is 12.2V which MAY be Identified by the PD only if PD Vmark\_th is lower than 12.2V...  
 So we have the following problems:  
 a) PSE can not support its maximum capacitance spec.  
 b) PSE can not support TCLE1/2 min value with (a)  
 c) The worst case scenario is: PD is using  $V_{mark\_th\_min} = 10.1V$ ,  $C_{pd} = 0.12uF$ ,  $I_{mark} = 0.25mA$  for the entire Vmark\_th range. PSE is using 0.52uF max,  $TCLE1/2 = 6msec$ .  
 At these conditins system is broken.  
 If we use typical numbers i.e. middle range numbers such:  
 PSE: 0.2uF ,  $TCLE1/2 = 9msec$ ,  $V_{class} = 18V$ .  
 PD: 0.1uF ,  $I_{mark} = 0.25mA$  for the entire Vmark\_th range,  $V_{mark\_th} = 10.2V$  (legal..PSE can not control what PD will use)  
 Then the voltage at the port during Mark event for  $TCLE1/2\_min = 9msec$  will be:  
 $V_{class} - 0.25mA * 9msec / 0.3uF = 18V - 7.5V = 10.5V$ . This case will not work too.  
 See attached simulation results "Vmark vs Imark at typical conditions" file.  
 Conclussions:  
 We dont want to change legacy parameters but we can do simple change that will fix the issue: To require PD to consume Iclass as long as  $V_{port} > V_{mark\_th}$ .

SuggestedRemedy

Add the following item after item 4 in Table 33-17:  
 Item: 4.1, Parameter: Mark\_event threshold current, Symbol:  $I_{mark\_th}$ , Units: mA,  
 Min: Iclass, Max:  $I_{class\_max}$ , Additional Information: For  $V_{class} \geq V_{port\_PD} \geq V_{mark\_th}$

IEEE P802.3at D4.0 PoEplus comments

*Proposed Response*      *Response Status* **Z**  
 REJECT.

This comment was WITHDRAWN by the commenter.

The comment incorrectly assumes a PD will draw mark current in the classification voltage range. A PD will draw class current until it hits the lower threshold (something less than 14.5V) at which point it will start to draw mark current - but the PD has switched from the Class Event to the Mark Event, so it already knows that it is in the Mark State.

"To require PD to consume Iclass as long as Vport>Vmark\_th"

This is not necessary as the PD internals will inherently distinguish the class/mark thresholds as it switches its loading to meet the existing voltage/current requirements. The existing PD requirements guarantee that it has self-aligning class/mark detection thresholds. The presence of the loop resistance requires the PD to have some hysteresis - although not explicitly called out, it is required.

---

*Cl* **01**      *SC* **1.3**      *P***17**      *L***11**      # **28**  
 Landry, David      Silicon Laboratories

*Comment Type*    **E**      *Comment Status*    **A**

These normative references to 802.1 exist in 802.3bc, which will likely precede 802.3at in ratification.

*SuggestedRemedy*  
 Remove the editor's note and 802.1AB and 802.1AX references.

*Response*      *Response Status*    **C**  
 ACCEPT.

---

*Cl* **01**      *SC* **1.5**      *P***18**      *L***3**      # **29**  
 Landry, David      Silicon Laboratories

*Comment Type*    **E**      *Comment Status*    **A**

These definitions of LLDP exist in 802.3bc, which will likely precede 802.3at in ratification.

*SuggestedRemedy*  
 Remove the LLDP and LLDPDU abbreviations.

*Response*      *Response Status*    **C**  
 ACCEPT.

---

*Cl* **25**      *SC* **25.4.4a.1**      *P***19**      *L***29**      # **30**  
 Landry, David      Silicon Laboratories

*Comment Type*    **E**      *Comment Status*    **A**      *EZ*

There may be confusion about which portion of the PHY test fixture is the device-under-test and which portion corresponds to the test circuit itself.

*SuggestedRemedy*  
 Draw a dashed line through the terminals, and annotate the left side with "DUT" and the right side with "test circuit"

*Response*      *Response Status*    **C**  
 ACCEPT.

See 219 for additional text.

---

*Cl* **25**      *SC* **25.4.4a.1**      *P***19**      *L***50**      # **31**  
 Landry, David      Silicon Laboratories

*Comment Type*    **E**      *Comment Status*    **A**      *EZ*

The terms "test circuit" and "test fixture" are used inconsistently.

*SuggestedRemedy*  
 Standardize on one term, preferably "test circuit."

*Response*      *Response Status*    **C**  
 ACCEPT IN PRINCIPLE.

Replace "test fixture" with "test circuit."

IEEE P802.3at D4.0 PoEplus comments

Cl 25 SC 25.4.5a P20 L4 # 32  
Landry, David Silicon Laboratories

Comment Type T Comment Status A TEZ  
Section 25.4.5a could have better readability.

*SuggestedRemedy*

Change to: Differential voltage signals generated by a remote transmitter that meets the specifications of Clause 25; passed through a link specified in 25.4.6; and received at the MDI of a 100BASE-TX PMD in a Type 2 Endpoint PSE or a Type 2 PD shall be translated into one of the PMD\_UNITDATA.indicate messages with a bit error ratio less than 1e-9 after link reset completion.

Response Response Status C  
ACCEPT IN PRINCIPLE.

Change to: Differential voltage signals generated by a remote transmitter that meets the specifications of Clause 25; passed through a link specified in 25.4.6; and received at the MDI of a 100BASE-TX PMD in a Type 2 Endpoint PSE or a Type 2 PD shall be translated into one of the PMD\_UNITDATA.indicate messages with a bit error ratio less than 1e-9 after link reset completion.

Instruct editor to adjust the PICs related to this shall if required.

Cl 33 SC 33.2.4.1 P44 L11 # 33  
Landry, David Silicon Laboratories

Comment Type TR Comment Status A pics  
The "if power is to be applied ..." paragraph contains normative language that reflects behavior already captured in the state diagram. We have generally chosen to eschew this tendency with new behavior, and should clean up old text whenever possible.

*SuggestedRemedy*

Eliminate the "shall" statements in paragraph starting on line 11. Also, eliminate "PSE shall back off ..." language from paragraph on line 20.

Response Response Status C  
ACCEPT IN PRINCIPLE.

Remove shall and replace with grammatically correct sentences.

Instruct the editor to adjust the PICs to match these changes.

See 61

Cl 33 SC 33.2.4.4 P45 L22 # 34  
Landry, David Silicon Laboratories

Comment Type E Comment Status A pics  
The statement, "Using only this PI voltage information is insufficient to determine ..." is too strong.

*SuggestedRemedy*

Change to: Using only this PI voltage information may be insufficient to determine ...

Response Response Status C  
ACCEPT.

Cl 33 SC 33.2.4.4 P45 L19 # 35  
Landry, David Silicon Laboratories

Comment Type T Comment Status A  
The legacy\_powerup variable seems more like a constant. Are we sure that we are consistently using constant and variables when we should be? My idea of a variable is something that changes throughout the operation or evaluation of a state diagram. Other questionable variables are class\_num\_events, mr\_pse\_alternative, pse\_dll\_capable, pse\_skips\_event2.

*SuggestedRemedy*

Verify that each variable is actually a variable and not a mis-labeled constant.

Response Response Status C  
ACCEPT IN PRINCIPLE.

Task the comment editor to coordinate the use of constants and variables with David Law and Bob Grow, the state machine experts.

This takes precedence over previous decisions of comments on constants and variables. (comment 70).

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.4.6 P48 L41 # 36  
Landry, David Silicon Laboratories

Comment Type E Comment Status A

This sentence has some issues: "The variable signature as defined in 33.2.7 and the variable mr\_valid\_signature." First, the variable signature is NOT defined in 33.2.7, which describes the method of detection probing and the electrical parameters of a valid PD detection signature but makes no mention of any state diagram variables. Second, this sentence seems redundant, as it is naming two variable which are reproduced immediately below.

SuggestedRemedy

Strike the sentence on line 41.

Response Response Status C

ACCEPT IN PRINCIPLE.

Strike the sentence on line 41 and replace the sentence on line 40 with "This function returns the following variables:"

Cl 33 SC 33.2.4.6 P48 L50 # 37  
Landry, David Silicon Laboratories

Comment Type TR Comment Status D pics

The variable, mr\_valid\_signature, seems to be used only once in the state diagram: set to FALSE in the IDLE state. It does not appear anywhere else. The diagram instead mostly uses (signature == valid).

SuggestedRemedy

Strike the function variable mr\_valid\_signature.

Proposed Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

this is not completely broken, it serves a trivial function. Accepting this comment results in no changes to the text.

Cl 33 SC 33.2.4.6 P49 L6 # 38  
Landry, David Silicon Laboratories

Comment Type ER Comment Status A EZ

The word "return" should be plural.

SuggestedRemedy

Change "return" to "returns."

Response Response Status C

ACCEPT.

Cl 33 SC 33.2.4.6 P49 L14 # 39  
Landry, David Silicon Laboratories

Comment Type TR Comment Status A pics

There is a copy-paste error in the first sentence of the do\_short\_detect function description. The function does not detect an overload condition only; it detects a short circuit (and by extension, an overload) condition.

SuggestedRemedy

Change "... detects an overload condition ..." to "... detects a short circuit condition or an overload condition ..."

Response Response Status C

ACCEPT IN PRINCIPLE.

This draft considers a PSE PI supplying more than Pclass to be in overload, when the PI is in current limit, the port is considered to be in a short circuit condition. Therefore, when the port is in current limit, both a short circuit and an overload condition exist. However, a function designed to detect a short should not be asserted when only an overload condition exists.

The function is used to monitor a short.

Change "... detects an overload condition ..." to "... detects a short circuit condition ..."

See 237, 4, 41

IEEE P802.3at D4.0 PoEplus comments

CI 33 SC 33.2.4.6 P49 L15 # 40  
 Landry, David Silicon Laboratories  
 Comment Type ER Comment Status A EZ  
 The word "return" should be plural.  
 SuggestedRemedy  
 Change "return" to "returns."  
 Response Response Status C  
 ACCEPT.

CI 33 SC 33.2.4.6 P49 L19 # 41  
 Landry, David Silicon Laboratories  
 Comment Type TR Comment Status A pics  
 The do\_short\_detect function isn't really looking for a current limit mode in the PSE. It should be monitoring for a short circuit condition.  
 SuggestedRemedy  
 Change "current limit" to "short circuit" on lines 19 and 20.  
 Response Response Status C  
 ACCEPT.

see 39, 237, 4, 5

CI 33 SC 33.2.4.7 P50 L11 # 42  
 Landry, David Silicon Laboratories  
 Comment Type TR Comment Status A pics  
 The transition from IDLE to START\_DETECTION, the transition from TEST\_MODE to IDLE, and the transition from TEST\_ERROR to IDLE all contain the qualifier (mr\_pse\_enable != force\_power). This could technical be true if (mr\_pse\_enable = enable) or (mr\_pse\_enable = disable). However, the state (mr\_pse\_enable = disable) triggers an unconditional entry into the DISABLED state. Therefore, the only meaningful value for the statement (mr\_pse\_enable != force\_power) is actually (mr\_pse\_enable = enable).  
 SuggestedRemedy  
 Change occurrences of (mr\_pse\_enable != force\_power) to (mr\_pse\_enable = enable). This has the added benefit of being easier to follow in the state diagrams.  
 Response Response Status C  
 ACCEPT.

CI 33 SC 33.2.6.1 P53 L48 # 43  
 Landry, David Silicon Laboratories  
 Comment Type ER Comment Status A EZ  
 There is an extraneous "and" in the parenthetical statement, (as specified in and Table 33-14).  
 SuggestedRemedy  
 Delete the "and"  
 Response Response Status C  
 ACCEPT.

CI 33 SC 33.2.6.1 P53 L53 # 44  
 Landry, David Silicon Laboratories  
 Comment Type E Comment Status A PSE  
 The NOTE is not very good advice. If one always waits for the voltage at the port to settle, then it may be difficult to weed out PDs with an invalid detection signature due to excessive capacitance.  
 SuggestedRemedy  
 Since the note may not be a good idea, and its not normative, and we really shouldn't have to hand-hold implementors on how to make voltage/current measurements -- delete it.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.

Replace the note with:  
 NOTE-Settling time before voltage or current measurement: the voltage or current measurement should be taken after VPSE has settled to within 1 % of its steady state condition for a PD detection signature connected as specified in Table 33-14.

A worst-case PSE detection range with maximum capacitance and maximum Rvalid value will settle to a final value in  $k \times 0.15 \times 26500 = k \times 4$  ms maximum.

When an invalid capacitor is used, the time constant becomes  $10/0.15 = 67$  time longer.

This note was added to help ensure that adequate settling time was provided for detection. Many network devices that are not PDs have resistors and capacitors on their MDI connections. Short settling times during detection may result in a false positive.

See 239.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.8 P55 L35 # 45  
Landry, David Silicon Laboratories

Comment Type E Comment Status A

The title of section 33.2.8 should make mention of mutual identification, since it is an important piece of 2-Event classification.

SuggestedRemedy

Change the title from "PSE classification of PDs" to "Mutual identification and PSE classification of PDs"

Response Response Status C

ACCEPT IN PRINCIPLE.

Change the title from "PSE classification of PDs" to "PSE classification of PDs and Mutual Identification"

Cl 33 SC 33.2.9 P60 L13 # 46  
Landry, David Silicon Laboratories

Comment Type TR Comment Status A *pics*

The use of "Vport" should be discontinued. There are 4 quantities of interest: (1) the static output voltage of a PSE, (2) the static output voltage of a PD, (3) the instantaneous measurement of the voltage at the PSE's PI, (4) the instantaneous measurement of the voltage at the PD's PI. We have already named (2) VPort\_PD, and (3) VPSE. We should call (1) VPort\_PSE, and (4) VPD. This eliminates any ambiguous use of "VPort"

SuggestedRemedy

Change Table 33-11 item 1 to "Vport\_PSE" and use this term whenever referencing this variable. Change all occurrences of Vport to VPSE or VPD as needed to refer to the instantaneous port voltage of the relevant PI.

Response Response Status C

ACCEPT IN PRINCIPLE.

Perform suggested remedy.

Also, adjust PICS as needed.

Cl 33 SC 33.2.8.1 P57 L49 # 47  
Landry, David Silicon Laboratories

Comment Type ER Comment Status A EZ

"... at Type 2 PSE shall return ..." should be "... a Type 2 PSE shall return ..."

SuggestedRemedy

Make it so.

Response Response Status C

ACCEPT.

Cl 33 SC 33.2.8.2 P58 L43 # 48  
Landry, David Silicon Laboratories

Comment Type E Comment Status A

The last paragraph on the page should mirror the language of the similar behavior for 1-Event classification.

SuggestedRemedy

Instead of "... the PSE assumes the PD ..." should be "... the PSE treats the PD as a Type 1 ..."

Response Response Status C

ACCEPT.

Cl 33 SC 33.2.9 P60 L16 # 49  
Landry, David Silicon Laboratories

Comment Type T Comment Status A *pics*

There is no apparent need for two voltage specs that are identical with different names (static output voltage vs load regulation).

SuggestedRemedy

Eliminate item 2, and collapse sections 33.2.9.1 and 33.2.9.2 together, essentially requiring that Vport\_PSE (I'm assuming we changed the name to this) applies over load (of course it does!).

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE 141



IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.9 P60 L38 # 50  
 Landry, David Silicon Laboratories  
 Comment Type E Comment Status A pics  
 Tovld is a but of a non sequitur, since we have matchin linrush/Tinrush and Ilim/Tlim.  
 SuggestedRemedy  
 Change Tovld to Tcut.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Change Tovld to Tcut.  
 Instruct the editor to adjust the PICs to match these changes.  
 -----  
 Some people find CUT, LIM, and OVLD confusing because they are not sure which is the highest current limit.  
 Removing OVLD and replacing it with CUT removes one of the confusing names.

Cl 33 SC 33.2.9 P61 L11 # 51  
 Landry, David Silicon Laboratories  
 Comment Type E Comment Status D PSE  
 We spell out "Maintain Power Signature" after an entry where we leave it an abbreviation.  
 SuggestedRemedy  
 Change "Maintain Power Signature" to "MPS" in items 19 and 20 for consistency and simplicity.  
 Proposed Response Response Status Z  
 REJECT.  
 This comment was WITHDRAWN by the commenter.  
 Replace table 33-11, parameter, item 19 with:  
 "DC MPS"  
 and item 20 with:  
 "PD MPS time for validity."

Cl 33 SC 33.2.9 P61 L22 # 52  
 Landry, David Silicon Laboratories  
 Comment Type TR Comment Status A TEZ  
 "Detection backoff time" should only apply to Alt B detection. The parameter name is too general sounding.  
 SuggestedRemedy  
 Change "Detection backoff time" to "Alternative B detection backoff time"  
 Response Response Status C  
 ACCEPT.

Cl 33 SC 33.2.9.2 P61 L49 # 53  
 Landry, David Silicon Laboratories  
 Comment Type TR Comment Status A pics  
 IMin2 no longer exists.  
 SuggestedRemedy  
 Change Imin2 to Imin  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 OBE 149

Cl 33 SC 33.2.9.4 P62 L13 # 54  
 Landry, David Silicon Laboratories  
 Comment Type TR Comment Status A pics  
 IMin2 no longer exists.  
 SuggestedRemedy  
 Change Imin2 to Imin  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 OBE 149

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.9.5 P62 L31 # 55  
 Landry, David Silicon Laboratories  
 Comment Type **E** Comment Status **A** EZ  
 The dangling line from the Rchan definition is improperly indented.  
 SuggestedRemedy  
 Indent the line so it lines up with the rest of the definition body  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.2.9.6 P62 L41 # 56  
 Landry, David Silicon Laboratories  
 Comment Type **TR** Comment Status **D** pics  
 What is the point of having a specification for linrush in the table if we immediately start making voltage-based and timing based changes to the limits?  
 SuggestedRemedy  
 Remove linrush from the table. The Tinrush spec will direct the reader here anyway, where they will learn all about how linrush works.  
 Proposed Response Response Status **Z**  
 REJECT.  
 This comment was WITHDRAWN by the commenter.  
 Tinrush is used in too many places. If it is removed from the table it should be defined.

Cl 33 SC 33.2.9.6 P62 L41 # 57  
 Landry, David Silicon Laboratories  
 Comment Type **TR** Comment Status **A** pics  
 This itemized list of linrush requirements is awkward to read. By the way, do we ever explicitly mention anywhere that the PSE is supposed to be limiting the current during inrush?  
 SuggestedRemedy  
 Leave the first paragraph of 33.2.9.6. Replace line 42 with "The PSE shall limit the maximum current sourced at the PI during POWER\_UP. The maximum inrush current sourced by the PSE shall not exceed the PSE inrush template in Figure 33-14." Strike items (a) and (b). Reword item (c) as: During POWER\_UP, for PI voltages above 30V, the minimum linrush requirement is 400mA. Reorder items (d) and (e) to denote increasing port voltage.  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 Leave the first paragraph of 33.2.9.6.  
 Replace line 42 with "The PSE shall limit the maximum current sourced at the PI during POWER\_UP. The maximum inrush current sourced by the PSE shall not exceed the PSE inrush template in Figure 33-14."  
 Strike items (a) and (b). Reword item (c) as: During POWER\_UP, for PI voltages above 30V, the minimum linrush requirement is 400mA. Reorder items (d) and (e) to denote increasing port voltage. (d) -> (b), (e) -> (a).  
 Instruct the editor to adjust the PICs to match these changes.

IEEE P802.3at D4.0 PoEplus comments

CI 33 SC 33.2.9.8 P64 L48 # 58  
 Landry, David Silicon Laboratories

Comment Type TR Comment Status R pics

0.025 A<sup>2</sup>s as an energy limitation constant is deprecated. It was originally derived from 802.3af current levels, which are exceeded even at DC in Type 2 systems. It seems unnecessarily limiting to enforce the same empirical constant.

SuggestedRemedy

Change the value of K from (0.5A \* 0.5A \* 100ms) to [(600mA\*450/350)<sup>2</sup> \* 75ms] = 0.045 A<sup>2</sup>s. Recalculate the intercepts with the 50A and 1.75A segments accordingly.

Response Response Status U

REJECT.

Vote to accept the comment

Y: 4 N: 5 A:4

fails

no consensus to change and comment is rejected by default

CI 33 SC 33.2.9.13 P66 L3 # 59  
 Landry, David Silicon Laboratories

Comment Type TR Comment Status A Shall

The state diagram captures the Tpon behavior related to this shall statement -- making the normative term extraneous.

SuggestedRemedy

Remove "shall"

Response Response Status C

ACCEPT IN PRINCIPLE.

Remove shall and make the sentence gramatically correct.

CI 33 SC 33.2.9.14 P66 L8 # 60  
 Landry, David Silicon Laboratories

Comment Type E Comment Status A EZ

It seems strange to have a section, 33.2.9.14, whose only contents are a NOTE.

SuggestedRemedy

Promote the NOTE to a real paragraph.

Response Response Status C

ACCEPT.

CI 33 SC 33.2.10 P66 L13 # 61  
 Landry, David Silicon Laboratories

Comment Type TR Comment Status A shall

The state diagram captures the power on behavior related to this shall statement -- making the normative term extraneous.

SuggestedRemedy

Remove "shall"

Response Response Status C

ACCEPT IN PRINCIPLE.

Replace shall with does.

Remove associated PICS.

CI 33 SC 33.2.11.1.2 P67 L48 # 62  
 Landry, David Silicon Laboratories

Comment Type ER Comment Status A EZ

"the PI of the PSE PI" is redundant redundant.

SuggestedRemedy

Change to "the PSE PI"

Response Response Status C

ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.11.1.2 P67 L53 # 63  
Landry, David Silicon Laboratories

Comment Type TR Comment Status D pics

Buried in item 3a is the requirement that the power feeding ripple and noise spec should be met when AC MPS is being probed. Instead of this scavenger hunt, a direct statement would suffice.

SuggestedRemedy

Delete item 3a, and place in 33.2.11.1.1 a statement that "The PSE shall meet the power feeding ripple and noise requirements of Table 33-11 when probing for the AC MPS with a valid PD connected."

Proposed Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

Accept and instruct the Editor to adjust the PICs as required.

Cl 33 SC 33.2.11.1.2 P68 L7 # 64  
Landry, David Silicon Laboratories

Comment Type TR Comment Status A EZ

Table entry 3c is another scavenger hunt that is unnecessary, since the reader should already have read about TMPDO in the Table 33-11, and the dropout behavior is explicitly defined in text in section 33.2.11.1.1.

SuggestedRemedy

Delete item 3c.

Response Response Status C

ACCEPT.

Cl 33 SC 33.2.11.1.2 P68 L11 # 65  
Landry, David Silicon Laboratories

Comment Type TR Comment Status A pics

Items 4a and 4b contain normative shalls. This is a bad spot, buried in a table, when there is an entire section (33.2.11.1.1) that already makes these statements -- with additional timing requirements that are not even spelled out here.

SuggestedRemedy

Remove the "shalls"

Response Response Status C

ACCEPT IN PRINCIPLE.

4a, parameter:

Remove "Shall not remove power from the PI." Replace with "Valid impedance."

4a, additional information:

Strike sentence "Impedance shall ... component."

4b, Remove "Shall remove power from PI." and replace it with, "Invalid impedance."

Instruct the editor to adjust the PICs to match these changes.

Cl 33 SC 33.2.11.1.2 P68 L37 # 66  
Landry, David Silicon Laboratories

Comment Type E Comment Status A EZ

These notes on Rpd\_d and Cpd\_d should not be part of the figure title. They should be part of the figure.

SuggestedRemedy

Take the notes out of the title, and add to them to the figure above.

Response Response Status C

ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.11.1.2 P68 L52 # 67  
Landry, David Silicon Laboratories

Comment Type E Comment Status A  
Figure 33-17 seems rather devoid of meaningful content. In fact, denoting an AC impedance as a resistor may mislead people.

SuggestedRemedy  
Strike Figure 33-17.

Response Response Status C  
ACCEPT IN PRINCIPLE.

Strike Figure 33-17.

Adjust references to Figure 33-17 to point of Fig 33-16.

Fig 33-16 should say Zac1/Zac2

Cl 33 SC 33.3 P69 L1 # 68  
Landry, David Silicon Laboratories

Comment Type E Comment Status A EZ  
The title for section 33.3 should follow the title of section 33.2.

SuggestedRemedy  
Change "Powered devices" to "Powered devices (PDs)"

Response Response Status C  
ACCEPT.

Cl 33 SC 33.3 P69 L3 # 69  
Landry, David Silicon Laboratories

Comment Type E Comment Status D  
The lead-in, "A PD is the portion of a device ..." is a bit redundant and not completely correct.

SuggestedRemedy  
Change to, "A PD is the portion of a DTE that is ..."

Proposed Response Response Status Z  
REJECT.

This comment was WITHDRAWN by the commenter.

Cl 33 SC 33.3.2 P70 L22 # 70  
Landry, David Silicon Laboratories

Comment Type T Comment Status A PD Variables  
The PD state diagram constants and variables should be checked over for proper usage. Is class\_sig a constant? Then why not pd\_dll\_capable?

SuggestedRemedy  
Check over constant/variable usage.

Response Response Status C  
ACCEPT IN PRINCIPLE.

802.3 section 21.5.2 implies that a variable may have a default and has its value dynamic set.

Neither pd\_2-event and pd\_dll\_capable in section 33.3.3.3 appear to have a dynamic nature, but are established statically by the hardware capability.

Move these two from the Variable section to 33.3.3.2 Constant section, and reword to something like "A constant indicating ."

\*\*this should be covered by comment 35\*\* move pse\_dll\_capable from section 33.2.4.4 to 33.2.4.3 and reword to something like: "a constant indicating..."

Cl 33 SC 33.3.3.3 P70 L57 # 71  
Landry, David Silicon Laboratories

Comment Type ER Comment Status A PD State Variables  
pd\_dll\_capable and pd\_dll\_enabled point to section 33.5. This is incorrect.

SuggestedRemedy  
Point to "see 33.6"

Response Response Status C  
ACCEPT IN PRINCIPLE.

ed note: this is line 47, not 57.

remove: "see 33.5"

See also comment 70.

IEEE P802.3at D4.0 PoEplus comments

CI 33 SC 33.3.3.3 P71 L15 # 72  
 Landry, David Silicon Laboratories

Comment Type **E** Comment Status **A** PD State Variables

The power\_received variable talks about power "present on the link." The PD is supposed to be specified at the PI.

*SuggestedRemedy*  
 Change "present on the link" to "present at the PI."

Response Response Status **C**  
 ACCEPT IN PRINCIPLE.

From:  
 power\_received  
 An indication from the circuitry that power is present on the link.

To:  
 power\_received  
 An indication from the circuitry that power is present on the PD's PI.

CI 33 SC 33.3.3.3 P71 L32 # 73  
 Landry, David Silicon Laboratories

Comment Type **E** Comment Status **A** PD State Variables

The present\_mps variable talks about MPS "applied to the link." The PD is supposed to be specified at the PI.

*SuggestedRemedy*  
 Change "applied to the link" to "applied to the PI."

Response Response Status **C**  
 ACCEPT IN PRINCIPLE.

"...PD's PI"

See comment 72

CI 33 SC 33.3.3.3 P71 L43 # 74  
 Landry, David Silicon Laboratories

Comment Type **ER** Comment Status **A** PD State Variables

Vport\_PD is an electrical parameter denoting the static voltage input at which the PD functions. It is being used here to denote the instantaneous voltage measurement at the PI, which could have any value from 0V to 57V. This is wrong.

*SuggestedRemedy*  
 Use "VPD" instead, as discussed in the comment calling for better differentiated terminology for static operating voltages and instantaneous voltage measurements at the respective PIs.

Response Response Status **C**  
 ACCEPT IN PRINCIPLE.

1) use suggestion  
 2) This also impacts ~7 locations in Figure 33-18 (PD state diagram)

see also comment 46

CI 33 SC 33.3.3.5 P73 L4 # 75  
 Landry, David Silicon Laboratories

Comment Type **E** Comment Status **D** PD State Machine

The NOTE is redundant, as the Tclass variable in itself establishes the concept that it takes time to settle on a class signature.

*SuggestedRemedy*  
 Strike the NOTE.

Proposed Response Response Status **Z**  
 REJECT.

This comment was WITHDRAWN by the commenter.

This was put into the standard to address the need for the voltage to transition through the class range, but not the need for the PD to respond to it during the transition to operating voltage.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.3.4 P73 L37 # 76  
Landry, David Silicon Laboratories

Comment Type E Comment Status A PD Detection

The paragraph talking about signature guardbands and a PD that presents a non-valid signature being a non-valid PD is unnecessary.

SuggestedRemedy

Strike the paragraph.

Response Response Status C

ACCEPT IN PRINCIPLE.

Tables 33-14 and 33-15 present Valid and Invalid signatures. There are signatures that correspond to either.

"The valid and non-valid detection signature regions are separated by guardbands. The guardbands for the slope are the ranges 2.0 kO to 23.7 kO and 26.3 kO to 45.0 kO. A PD that presents a signature in a guardband is non-compliant."

Maintain the intent comment changing the paragraph to:

A PD that presents a signature outside Table 33-14 is non-compliant, while a PD that presents the signature of Table 33-15 is assured to fail detection.

Cl 33 SC 33.3.4 P74 L25 # 77  
Landry, David Silicon Laboratories

Comment Type TR Comment Status A TEZ

Figure 33-19 pops up without any preamble or explanation. It is difficult for the reader to even link it with Table 33-14, as is apparently intended.

SuggestedRemedy

Add some explanation of what the figure is trying to say, or delete it altogether.

Response Response Status C

ACCEPT IN PRINCIPLE.

Modify Table 33-14: Add notation to Voffsett, Conditions column "see Figure 33-19"

Cl 33 SC 33.3.5.2.1 P76 L11 # 78  
Landry, David Silicon Laboratories

Comment Type TR Comment Status A TEZ

The NOT\_MDI\_POWERED state has been eliminated.

SuggestedRemedy

Replace NOT\_MDI\_POWERED with IDLE

Response Response Status C

ACCEPT.

Cl 33 SC 33.3.7.9 P81 L25 # 79  
Landry, David Silicon Laboratories

Comment Type E Comment Status A

It seems strange to have a section, 33.3.7.9, whose only contents are a NOTE.

SuggestedRemedy

Promote the NOTE to a real paragraph.

Response Response Status C

ACCEPT IN PRINCIPLE.

Move note to 33.3.7.2.1 and change the any reference to 33.3.7.9 to 33.3.7.2.1. Delete section 33.3.7.9

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.6 P97 L3 # 80  
Landry, David Silicon Laboratories

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

The current structure of 33.6 makes it difficult to visualize the possible future text which will turn into an amendment of the theoretical Clause 79.

*SuggestedRemedy*

Restructure 33.6 so that it more closely resembles an amendment to 802.3bc. Use the contents of 802.3bc as a starting point, and replace 33.6 with a set of editorial amendment instructions.

Proposed Response Response Status **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

The intent is to move this material over to C79 as the commenter points out.

The Editor-in-Chief for 802.3at and the Editor-in-Chief for 802.3bc are encouraged to produce a set of editorial instructions that can be presented to the P802.3at TF for consideration when discussing this comment.

Cl 33 SC 33.6.5 P100 L30 # 81  
Landry, David Silicon Laboratories

Comment Type **TR** Comment Status **A** 161

There is a normative requirement here for a Type 1 PSE to send LLDPDUs. What if the PSE doesn't even implement DLL?

*SuggestedRemedy*

Change from "A Type 1 PSE shall send ..." to "A Type 1 PSE that implements Data Link Layer classification shall send ..."

Response Response Status **C**

ACCEPT IN PRINCIPLE.

OBE 229

Cl 01 SC 1.4 P17 L50 # 82  
Vetteth, Anoop Cisco Systems, Inc.

Comment Type **E** Comment Status **A**

Definition of Type 2 PSE refers to PD as singular object while definition of Type 1 PSE refers to PD as a plural object.

*SuggestedRemedy*

Be Consistent

Response Response Status **C**

ACCEPT IN PRINCIPLE.

Change line 45 to read "only a Type 1 PD."

Cl 30 SC 30.2.5 P25 L28 # 83  
Vetteth, Anoop Cisco Systems, Inc.

Comment Type **ER** Comment Status **A**

The power priority attribute that the PSE sends is named "aDLLPDPowerPriority" while the mirrored value is called "aDLLPowerPriority"

*SuggestedRemedy*

Either use PD or drop PD from both. Do the same for PD object class also. Do a global change

Response Response Status **C**

ACCEPT IN PRINCIPLE.

Remove 'PD' from aDLLPDPowerPriority.

Cl 30 SC 30.2.5 P25 L44 # 84  
Vetteth, Anoop Cisco Systems, Inc.

Comment Type **ER** Comment Status **A**

aDLLPDPowerPriority and aMirroredDLLPowerPriority should belong to PD DLL Power Classification Package

*SuggestedRemedy*

Correct this

Response Response Status **C**

ACCEPT.



IEEE P802.3at D4.0 PoEplus comments

Cl 30 SC 30.2.5 P26 L26 # 85  
 Vetteth, Anoop Cisco Systems, Inc.

Comment Type ER Comment Status A 254

aPDReducedOperationPowerValue does not belong to any package

*SuggestedRemedy*

Unless the standard defines how to use this attribute, it doesn't make any sense. Remove this attribute and the corresponding attribute definition on page 33. At the very least define which package this attribute belongs to.

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE 254

Cl 30 SC 30.2.5 P26 L26 # 86  
 Vetteth, Anoop Cisco Systems, Inc.

Comment Type TR Comment Status A

aPDModelNumber is useless unless it is defined and unique

*SuggestedRemedy*

Remove this attribute and its attribute definition on page 32

Response Response Status C

ACCEPT.

Cl 33 SC 33.2.4 P50 L34 # 87  
 Vetteth, Anoop Cisco Systems, Inc.

Comment Type TR Comment Status A pics

The default value of ted\_timer\_done should be "Done". If the default value is "Not\_Done" it will not permit power-on for any port under normal operating condition until the first fault is encountered (which ironically can never happen). This branch from CLASSIFICATION\_EVAL to POWER\_DENIED will be taken and so power will always be denied.

*SuggestedRemedy*

Add to the definition of ted\_timer on page 48: "The default state of this timer is ted\_timer\_done"

Response Response Status C

ACCEPT.

Cl 33 SC 33.2.4 P50 L37 # 88  
 Vetteth, Anoop Cisco Systems, Inc.

Comment Type TR Comment Status A pics

The criterion "power\_applied" is used only with legacy\_powerup. New criterion "Icurrent\_limiting" is used with new definition for inrush. The definition for power\_applied says that the "PSE has begun steady state operation ..... completed ramp of voltage and is operating beyond the POWER\_UP requirements of 33.2.9.6". All these should apply for new inrush definition also. Moreover all the timers on page 52 are initialized when "power\_applied" is asserted. Per the SM on page 50, the PSE can reach the POWER\_ON state even when "power\_applied" is not asserted. This is most certainly a bug.

*SuggestedRemedy*

Add to the definition of "power\_applied" on page46 : "... completed ramp of voltage, is not in current limiting state and is operating beyond....."; Change the transition condition from POWER\_UP to SET\_PARAMETERS to: [(tinrush\_timer\_not\_done \* legacy\_powerup) + tinrush\_timer\_done] \* power\_applied \* tpon\_timer\_not\_done \* (PSE\_TYPE = 2); Change the transition condition from POWER\_UP to POWER\_ON to: [(tinrush\_timer\_not\_done \* legacy\_powerup) + tinrush\_timer\_done] \* power\_applied \* tpon\_timer\_not\_done \* (PSE\_TYPE = 1); Change the transition condition from POWER\_UP to POWER\_ON to: tinrush\_timer\_done\*[legacy\_powerup + !power\_applied + (!port >= linrush)]; Remove current\_limiting definition from page 45

Response Response Status C

ACCEPT IN PRINCIPLE.

Add to the definition of "power\_applied" on page46 : "... completed ramp of voltage, is not in current limiting state and is operating beyond....."; Change the transition condition from POWER\_UP to SET\_PARAMETERS to: [(tinrush\_timer\_not\_done \* legacy\_powerup) + tinrush\_timer\_done] \* power\_applied \* tpon\_timer\_not\_done \* (PSE\_TYPE = 2);

Change the transition condition from POWER\_UP to POWER\_ON to: [(tinrush\_timer\_not\_done \* legacy\_powerup) + tinrush\_timer\_done] \* power\_applied \* tpon\_timer\_not\_done \* (PSE\_TYPE = 1);

Change the transition condition from POWER\_UP to ERROR\_DELAY to: tinrush\_timer\_done\*[legacy\_powerup + !power\_applied + (!port >= linrush)]; Remove current\_limiting definition from page 45

Instruct the editor to adjust the PICs to match these changes.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.8 P56 L39 # 89  
 Vetteth, Anoop Cisco Systems, Inc.  
 Comment Type E Comment Status A EZ  
 The term "as soon as" sounds too restrictive  
 SuggestedRemedy  
 Replace with "after"  
 Response Response Status C  
 ACCEPT.

Cl 33 SC 33.2.9 P60 L13 # 90  
 Vetteth, Anoop Cisco Systems, Inc.  
 Comment Type T Comment Status A pics  
 Vport is defined in this section but is used prior to this section without referencing this section.  
 SuggestedRemedy  
 Include definition of Vport in section 1.4. Similarly lport is used in multiple locations but defined in section 33.2.9.7. Include definition of lport also in section 1.4  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Add Vport definition to section 1.4:  
 1.4.x Vport: the voltage at the PI measured between any conductor of one power pair and any conductor of the other power pair. (See IEEE 802.3, Clause 33.)  
 1.4.x lport: the total power pair current going into the PI. (See IEEE 802.3, Clause 33.)

Cl 33 SC 33.2.9 P60 L29 # 91  
 Vetteth, Anoop Cisco Systems, Inc.  
 Comment Type TR Comment Status A pics  
 The variable "lport\_max" is not used anywhere.  
 SuggestedRemedy  
 Removing this might be too controversial but in order to prevent references like lport\_max min; it would be better to change the symbol to "lcon"  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 lport\_max is used in several places.  
 Change the symbol to "lcon."  
 Instruct the editor to adjust the PICs to match these changes.

Cl 33 SC 33.2.9 P60 L47 # 92  
 Vetteth, Anoop Cisco Systems, Inc.  
 Comment Type TR Comment Status A pics  
 The parameter definition for line item 12 is not correct. This is not the continuous output power.  
 SuggestedRemedy  
 Change the parameter definition to "Output power capability in POWER\_ON state" to be consistent with line item 5. Also change the heading for section 33.2.9.11 to "Output power capability in POWER\_ON state"

Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Change the parameter definition of table 33-11, item 12 to "Output power capability in POWER\_ON state."  
 Change 33.2.9.11 title to "POWER\_ON state output power capability"

Cl 33 SC 33.2.9 P60 L47 # 93  
 Vetteth, Anoop Cisco Systems, Inc.  
 Comment Type TR Comment Status A pics  
 Vport and lport are used as instantaneous values. Pport here is the max power capability  
 SuggestedRemedy  
 Replace Pport with Pcon. Change all references of Pport with Pcon. Pport is used only in section 33.2.9.11. If required include a definition of Pport which is defined as the instantaneous power at the PSE PI. Pport\_PD in the PD section is used as the instantaneous PD power.

Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Replace Pport with Pcon. Change all references of Pport to Pcon.  
 Pport is used only in section 33.2.9.11. Include a definition of Pport in this section which defines it as "the instantaneous power at the PSE PI."  
 Instruct the editor to adjust the PICs to match these changes.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.9 P61 L10 # 94  
 Vetteth, Anoop Cisco Systems, Inc.  
 Comment Type ER Comment Status A pics  
 Table 33-11 Line item 18. Imin leads to references like Imin\_max  
 SuggestedRemedy  
 Change Imin to lhold  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 OBE 149.

Cl 33 SC 33.2.9.6 P63 L10 # 95  
 Vetteth, Anoop Cisco Systems, Inc.  
 Comment Type TR Comment Status A TEZ  
 Figure 33-14 shows Tinrush extending midway between 50ms and 75ms.  
 SuggestedRemedy  
 Since this is the Inrush upperbound template Tinrush should extend to 75ms  
 Response Response Status C  
 ACCEPT.

Cl 33 SC 33.3.3.5 P72 L10 # 96  
 Vetteth, Anoop Cisco Systems, Inc.  
 Comment Type TR Comment Status A PD State Diagram  
 The transition from IDLE state to DO\_DETECTION state should be: "Vport\_PD > Vreset"  
 since all other transitions are based on voltage (for sake of consistency)  
 SuggestedRemedy  
 Change this. Removing mdi\_power\_required will not affect the SM because when  
 !mdi\_power\_required is asserted, the SM automatically ends up in the IDLE state  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Add sentence to the end of the paragraph on P73 L19: "A PD may or may not present a  
 valid detection signature when in the IDLE state."  
 Incorporate changes documented in fig33-18.png.  
 Als0, P71, L11: change "NOT\_MDI\_POWERED" to "OFFLINE"

Cl 33 SC 33.3.3.5 P72 L41 # 97  
 Vetteth, Anoop Cisco Systems, Inc.  
 Comment Type TR Comment Status A PD State Machine  
 Page 75 line 29 and page 76 line 18 state that the "pse\_power\_type" variable is updated  
 after DLL is completed. This action is not performed by the SM  
 SuggestedRemedy  
 Add the following assignment to MDI\_POWER2: pse\_power\_type <= 2  
 Response Response Status C  
 ACCEPT.  
 This is the place where a PD discovers a PSE with type 1 hardware class is a type 2 PSE  
 with DLL.

Cl 33 SC 33.3.7.4 P78 L47 # 98  
 Vetteth, Anoop Cisco Systems, Inc.  
 Comment Type ER Comment Status A EZ  
 50ms is a number that needs to be replaced with a variable  
 SuggestedRemedy  
 Change to Tovld\_min  
 Response Response Status C  
 ACCEPT.

Cl 33 SC 33.5.1.1.1 P93 L7 # 99  
 Vetteth, Anoop Cisco Systems, Inc.  
 Comment Type T Comment Status A  
 Table 33-21 Item 11.5 Per the PSE SM, DLL classification is enabled/disabled by the SM  
 and not by management entity.  
 But the capability of the PSE with regard to DLL is an input to the SM as indicated by the  
 variable "pse\_dll\_capable"  
 SuggestedRemedy  
 Change this field to "Data Link Layer Capability"  
 Add a new field to Register 12 to indicate if the PSE SM has completed powerup and  
 enabled DLL as indicated by the SM variable pse\_dll\_enable  
 Response Response Status C  
 ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.5.1.2 P93 L95 # 100  
Vetteth, Anoop Cisco Systems, Inc.

Comment Type TR Comment Status A

Table 33-22 item 12.6:4. We have defined the behavior when classification yields invalid class. Show the status

SuggestedRemedy

Change the value corresponding to 101 from "reserved" to "overcurrent" or "Invalid Class"

Response Response Status C

ACCEPT IN PRINCIPLE.

Use "Invalid Class"

Cl 33 SC 33.5.1.2 P93 L95 # 101  
Vetteth, Anoop Cisco Systems, Inc.

Comment Type T Comment Status A

Table 33-22. Register 12 is not comprehensive with regard to fault conditions. Missing the following fault conditions: inrush fault, option\_vport\_lim fault and Power not available fault.

SuggestedRemedy

Add them

Response Response Status C

ACCEPT IN PRINCIPLE.

use 12.12 to indicate any of these conditions

Cl 33 SC 33.5.1.2 P93 L35 # 102  
Vetteth, Anoop Cisco Systems, Inc.

Comment Type T Comment Status A

Table 33-22. It will be advantageous to know if the PSE is using Type-1 or Type-2 parameters when powering a Class-4 PD

SuggestedRemedy

Add this info

Response Response Status C

ACCEPT IN PRINCIPLE.

Use bit 12.15 to provide this info.

Cl 33 SC 33.6.2.1 P98 L17 # 103  
Vetteth, Anoop Cisco Systems, Inc.

Comment Type TR Comment Status A

Table 33-23. The enumeration for PD Power source "10 = Local" is not valid since the PD/PSE cannot exchange DLL packets when the PSE is not powering the PI or when PD is not drawing power from the PI.

SuggestedRemedy

Delete this enumeration

Response Response Status C

ACCEPT IN PRINCIPLE.

Delete this enumeration

-----  
The commenter points to an interesting subtlety in the protocol. Assuming that the L2 engine is enabled, if the PD goes to a local power, can the L2 engine stay up, perhaps to allow for exchanges that are not related to budgeting or do we want to eliminate this possibility. Recommend that this is discussed in the L2 ad-hoc

Cl 33 SC 33.6.4 P100 L7 # 104  
Vetteth, Anoop Cisco Systems, Inc.

Comment Type TR Comment Status A 226

Table 33-26. Power Priority is not reserved for PSE. It is defined.

SuggestedRemedy

Change Reserved to aDLLPowerPriority

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE #226

The power priority is defined for the PD. Is the commenter asking for the ability of the PSE to assign / override the default priority of the PD? If so, this should be aDLLPDPowerPriority. Otherwise the commenter is encouraged to provide more background to the comment

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.6.6.3 P101 L42 # 105  
 Vetteth, Anoop Cisco Systems, Inc.  
 Comment Type ER Comment Status A  
 The variables are not arranged in alphabetic order like other similar sections  
 SuggestedRemedy  
 Fix this  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Arrange in alphabetical order

Cl 33 SC 33.6.6.3 P102 L8 # 106  
 Vetteth, Anoop Cisco Systems, Inc.  
 Comment Type ER Comment Status A  
 PDMaxPowerValue - Does not reference equation 33-20  
 SuggestedRemedy  
 Append to the definition "This power value is encoded according to Equation (33--20), where X is the decimal value of PDMaxPowerValue"  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 OBE 162

Cl 33 SC 33.6.6.3 P102 L10 # 107  
 Vetteth, Anoop Cisco Systems, Inc.  
 Comment Type E Comment Status A  
 PDRequestedPowerValue - The third sentence begins with "The PD power value is". This is not PD power value  
 SuggestedRemedy  
 Change "The PD power value" to "This power value"  
 Response Response Status C  
 ACCEPT.

Cl 33 SC 33.6.6.3 P102 L17 # 108  
 Vetteth, Anoop Cisco Systems, Inc.  
 Comment Type E Comment Status A  
 PSEAllocatedPowerValue - The third sentence begins with "The PD power value is". This is not PD power value  
 SuggestedRemedy  
 Change "The PD power value" to "This power value"  
 Response Response Status C  
 ACCEPT.

Cl 33 SC 33.6.6.3 P102 L30 # 109  
 Vetteth, Anoop Cisco Systems, Inc.  
 Comment Type ER Comment Status A 230  
 local\_system\_change - this variable definition uses locRequestedPowerValue that is not defined  
 SuggestedRemedy  
 Replace locRequestedPowerValue to "allocated/requested power"  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 OBE #230

Cl 33 SC 33.6.6.3 P103 L30 # 110  
 Vetteth, Anoop Cisco Systems, Inc.  
 Comment Type TR Comment Status A  
 Table 33-28. The values mentioned under the aMirroredDLLPowerType attribute for PSE and PD have been swapped. The PSE object should see the values corresponding to the PD power type while the PD object should see values corresponding to the PSE power type.  
 SuggestedRemedy  
 Fix this. Move the enumerations 10 and 00 from PSE to PD. Move enumerations 11 and 01 from PD to PSE  
 Response Response Status C  
 ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.6.6 P106 L9 # 111  
Vetteth, Anoop Cisco Systems, Inc.

Comment Type TR Comment Status A

The variable pse\_power\_type is not defined.

SuggestedRemedy

A control variable output by the PD state diagram (Figure 33-18) to indicate the type of PSE by which it is being powered

Response Response Status C

ACCEPT.

Cl 33 SC 33.6.6 P106 L23 # 112  
Vetteth, Anoop Cisco Systems, Inc.

Comment Type TR Comment Status A

The PD updates its maximum permissible power draw in the PD POWER ALLOCATION state. This happens when the new value is lesser than the present value or the PSE allocated value. There is a corner case bug if the PSE and PD settle at two different values, with PSE allocated value being greater than the PD requested value. For example assume that the steady state is PSE allocation is 20W and PD requested is 15W. The PD wants to increase its request to 19W and simultaneously PSE wants to reduce its allocation to 15W. When this happens, the PD should wait until its request is approved which it is not doing currently.

SuggestedRemedy

The PD should be allowed to increase its max power draw only when the PSE and PD are in sync with regard to the mirrored values. The proposed change is shown in attached pdf avetteth\_pdsm.pdf. Append to Section 33.6.7.2 "When the PD notices that the MirroredPDRequestedPowerValueEcho is equal to PDRequestedPowerValueEcho, then the PD can assume that MirroredPSEAllocatedPowerValue is the power that the PSE has presently allocated to the PD. Based on this the PD updates its max permissible power draw by entering the PD\_POWER\_REALLOCATION\_2 state."

Response Response Status C

ACCEPT IN PRINCIPLE.

Enact changes found in avetteth\_PDSM.pdf

Cl 33 SC 33.8.3.2 P111 L11 # 113  
Vetteth, Anoop Cisco Systems, Inc.

Comment Type TR Comment Status A EZ

Item PDCL2 - the status should be PDT2:M

SuggestedRemedy

Fix this

Response Response Status C

ACCEPT.

Cl 33 SC 33.8.3.2 P111 L14 # 114  
Vetteth, Anoop Cisco Systems, Inc.

Comment Type TR Comment Status A EZ

Item DLLC - the status should be PDT2:M

SuggestedRemedy

Fix this

Response Response Status C

ACCEPT.

Cl 33 SC 33.8.3.2 P114 L13 # 115  
Vetteth, Anoop Cisco Systems, Inc.

Comment Type TR Comment Status A

Item PSE19 - The spec requires only a minimum of 2 measurements

SuggestedRemedy

Change to Atleast two measurements with Vdetect

Response Response Status C

ACCEPT IN PRINCIPLE.

Change to 'at least two measurements'

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.8.3.2 P114 L13 # 116  
Vetteth, Anoop Cisco Systems, Inc.

Comment Type **TR** Comment Status **A**  
item PSE19 - The spec does not require 1V difference between consecutive measurements if there are more than 2 measurements

SuggestedRemedy  
Remove consecutive

Response Response Status **C**  
ACCEPT IN PRINCIPLE.

From:  
At least 1 V difference between consecutive measurements

To:  
At least 1 V difference between any two measurements in the range of Vdetect

Cl 33 SC 33.8.3.2 P114 L31 # 117  
Vetteth, Anoop Cisco Systems, Inc.

Comment Type **TR** Comment Status **A** EZ  
Item PSE24, PSE25, PSE26 and PSE27 use just "classification" to describe physical layer classification

SuggestedRemedy  
Change classification to "physical layer classification"

Response Response Status **C**  
ACCEPT IN PRINCIPLE.

PSE24 is generic with respect to 1-Event Physical Layer classification, 2-Event Physical Layer classification, and Data Link Layer Classification. No change needed.

PSE25, PSE26, and PSE27 should have "classification" changed to "Physical Layer classification."

Cl 33 SC 33.8.3.2 P115 L11 # 118  
Vetteth, Anoop Cisco Systems, Inc.

Comment Type **TR** Comment Status **A** TEZ  
Item PSE35 is incorrect. We have the option to treat this condition as Class 0 or go to Idle state

SuggestedRemedy  
Fix this

Response Response Status **C**  
ACCEPT IN PRINCIPLE.

See 270

Cl 33 SC 33.8.3.2 P115 L37 # 119  
Vetteth, Anoop Cisco Systems, Inc.

Comment Type **TR** Comment Status **A** TEZ  
Item PSE46 is incorrect. This condition will cause the PSE to go into IDLE state

SuggestedRemedy  
Fix this

Response Response Status **C**  
ACCEPT IN PRINCIPLE.

See 272

Cl 33 SC 33.8.3.10 P127 L1 # 120  
Vetteth, Anoop Cisco Systems, Inc.

Comment Type **TR** Comment Status **A** TEZ  
Item DLL4, DLL6, DLL8, DLL12 and DLL15 are incorrect and have not been updated for a long time

SuggestedRemedy  
Fix them

Response Response Status **C**  
ACCEPT IN PRINCIPLE.

See 312, 313, 314, 318

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.6.6.6 P105 L1 # 121  
Vetteth, Anoop Cisco Systems, Inc.

Comment Type TR Comment Status A 222

There are two functions "examine\_request" and "pse\_power\_review". One of them is called when there is local system change and the other is called when the PD is requesting for a change. We can combine the two into one function. Moreover since examine\_request returns a new PSE power value, the transition from PD POWER REQUEST to PSE POWER REALLOCATION state should be UCT.

SuggestedRemedy

Use the same function pse\_power\_review for both states: PD POWER REQUEST and PSE POWER REVIEW. Delete "examine\_request" function from 33.6.6.5. Remove the transition from PD POWER REQUEST to MIRROR UPDATE. Change the condition for the transition from PD POWER REQUEST to PSE POWER REALLOCATION to UCT. Change the definition for pse\_power\_review to: "This function evaluates the power allocation or budget of the PSE based on local system changes or change in power request from the PD". Look at avetteth\_psesm.pdf for comprehensive changes.

Response Response Status C

ACCEPT IN PRINCIPLE.

Editor to enact changes found in "avetteth\_PSESM.pdf"

delete the function "examine\_request" P103, L54

Cl 25 SC 25.4.4a.1 P19 L41 # 122  
Schindler, Frederick Cisco Systems, Inc.

Comment Type T Comment Status A TEZ

p16 l41. Tying this new approach to the legacy approach improves the reader's understanding.

SuggestedRemedy

Show that  $\tau = 2L/R$ , where L = open-circuit inductance of the Ethernet isolation transformer and R = 100 ohms.

Response Response Status C

ACCEPT IN PRINCIPLE.

Request the Editor to fit this into text flow. Also see 218.

Cl 25 SC 25.4.4a.1 P19 L41 # 123  
Schindler, Frederick Cisco Systems, Inc.

Comment Type E Comment Status A EZ

p19, l41. A small negative sign is sometimes missed.

SuggestedRemedy

Reformat the equation to remove the negative sign.  
 $\tau = T/\ln(Va/Vc)$

Response Response Status C

ACCEPT.

Cl 33 SC 33.2.2 P39 L2 # 124  
Schindler, Frederick Cisco Systems, Inc.

Comment Type E Comment Status A

p39, l2. These definitions are copies of what is presented on p17.

SuggestedRemedy

Reference the definitions rather than repeating them or use a word processing feature that keeps the definitions consistent.

Response Response Status C

ACCEPT IN PRINCIPLE.

Instruct the Editor to determine and use the best way to keep definitions consistent. Accepting comment results in no change to the text.

Cl 33 SC 33.2.4.1 P44 L15 # 125  
Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status A EZ

p44, l15. A system with a Type 1 PSE and a Type 2 midspan may be constructed to power Type 2 PDs.

SuggestedRemedy

Add the following note to the end of section 33.2.4.1,  
Note: A Type 1 Alternative A, PSE may need to have its DTE Power ability disabled when it is attached to the same link segments as a Type 2 Alternative B, midspan PSE.  
This allows the Type 2 Alternative B, midspan to successfully complete a detection cycle.

Response Response Status C

ACCEPT.



IEEE P802.3at D4.0 PoEplus comments

CI 33 SC 33.2.4.4 P45 L1 # 126  
 Schindler, Frederick Cisco Systems, Inc.  
 Comment Type **TR** Comment Status **A** TEZ  
 p45, 1. This value is implementation dependent. It is also tested but not set in the state diagrams.  
 SuggestedRemedy  
 Add the following sentence immediately after the variable name.  
 A variable that is set in an implementation-dependent manner.  
 Response Response Status **C**  
 ACCEPT.

CI 33 SC 33.2.4.4 P45 L19 # 127  
 Schindler, Frederick Cisco Systems, Inc.  
 Comment Type **TR** Comment Status **A** TEZ  
 p45, 19. This value is implementation dependent. It is also tested but not set in the state diagrams.  
 SuggestedRemedy  
 Add the following sentence immediately after the variable name.  
 A variable that is set in an implementation-dependent manner.  
 Response Response Status **C**  
 ACCEPT.

CI 33 SC 33.2.4.4 P46 L20 # 128  
 Schindler, Frederick Cisco Systems, Inc.  
 Comment Type **ER** Comment Status **A** EZ  
 p46, 20. This text does not cover the state where TEST\_MODE result in DTE power.  
 SuggestedRemedy  
 Add sentence to the end of pi\_powered, TRUE sentence.  
 ... to be powered, or power is being forced on in TEST\_MODE.  
 Response Response Status **C**  
 ACCEPT.

CI 33 SC 33.2.4.4 P46 L42 # 129  
 Schindler, Frederick Cisco Systems, Inc.  
 Comment Type **TR** Comment Status **A** TEZ  
 p46, 42. This value is implementation dependent. It is also tested but not set in the state diagrams.  
 SuggestedRemedy  
 Add the following sentence immediately after the variable name.  
 A variable that is set in an implementation-dependent manner.  
 Response Response Status **C**  
 ACCEPT.

CI 33 SC 33.2.4.4 P47 L9 # 130  
 Schindler, Frederick Cisco Systems, Inc.  
 Comment Type **TR** Comment Status **A** TEZ  
 p47,9. This value is implementation dependent. It is also tested but not set in the state diagrams.  
 SuggestedRemedy  
 Add the following sentence immediately after the variable name.  
 A variable that is set in an implementation-dependent manner.  
 Response Response Status **C**  
 ACCEPT.

This refers to variable pse\_skips\_event2.

CI 33 SC 33.2.4.5 P48 L2 # 131  
 Schindler, Frederick Cisco Systems, Inc.  
 Comment Type **TR** Comment Status **A** TEZ  
 p48, 2. This text changes the definition from what some legacy devices expect and conflicts with the definition provided in table 33-11, item 25.  
 SuggestedRemedy  
 Replace "detect" with "power," in this sentence. Have the Editor update the related PIC.  
 Response Response Status **C**  
 ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.4.6 P48 L31 # 132  
 Schindler, Frederick Cisco Systems, Inc.  
 Comment Type ER Comment Status A EZ  
 This text is easily confused with PD detection.  
 SuggestedRemedy  
 Replace "PD detection" with "PD classification."  
 Response Response Status C  
 ACCEPT.

Cl 33 SC 33.2.4.6 P48 L32 # 133  
 Schindler, Frederick Cisco Systems, Inc.  
 Comment Type ER Comment Status A  
 p48, 32. Specifications cover compliant behavior.  
 SuggestedRemedy  
 Delete this sentence.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Delete "Any class may be returned if an invalid classification signature is detected."

Cl 33 SC 33.2.4.6 P49 L1 # 134  
 Schindler, Frederick Cisco Systems, Inc.  
 Comment Type ER Comment Status A EZ  
 p49, 1. Provide text showing what this function does.  
 SuggestedRemedy  
 Add the following text after the existing text,  
 This function produce the classification mark voltage.  
 Response Response Status C  
 ACCEPT.

Cl 33 SC 33.2.4.6 P49 L34 # 135  
 Schindler, Frederick Cisco Systems, Inc.  
 Comment Type ER Comment Status A TEZ  
 p49, 34. What if a Type 1 PD that supports DLL is attached? Fix this to improve PICs readability.  
 SuggestedRemedy  
 Delete the period from the first sentence and "A Type 2 PSE" from the second sentence to produce a single sentence: "..is not complete and shall ..." Have the Editor update the related PIC.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Delete the period from the first sentence and "A Type 2 PSE" from the second sentence to produce a single sentence: "..is not complete and shall ..."  
 This produces the new sentence:  
 When a Type 2 PSE powers a Type 2 PD, the PSE may choose to assign a value of '1' to parameter\_type if mutual identification is not complete and shall assign a value '2' to the parameter\_type if mutual identification is complete.  
 Have the Editor update the related PIC.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.4.7 P52 L12 # 136  
 Schindler, Frederick Cisco Systems, Inc.

Comment Type TR Comment Status A pics

p52, 12. The state diagram and text of 33.2.11.1.2, line 14 do not match.  
 Text states "... Iport is greater than or equal to Imin max for at least Tmps every Tmps + Tmpdo..."  
 The state diagrams tests that the signature is invalid for at least Tmpdo before power is removed. It does not test that a valid signal has been present for at least Tmps.  
 The PD spec. on page 81, line 41 requires at least 10 mA for 75 ms.

SuggestedRemedy

Interoperability requires that a PD draw at least the holding current for at least the PSE hold time minimum.  
 Replace p67, line 14, "... Iminmax for at least Tmps every Tmps+Tmpdo, ..." with "... Iminmax continuously for at least Tmps every Tmps + Tmpdo, ..."

Response Response Status C

ACCEPT IN PRINCIPLE.

Replace p67, line 14, "... Iminmax for at least Tmps every Tmps+Tmpdo, ..." with "... Iminmax continuously for at least Tmps every Tmps + Tmpdo, ..."

Instruct the editor to adjust the PICs to match these changes.

Instruct the editor to combine this comment and 149, then adjust the PICs to match these changes.

-----  
 P67, 6 requires Ihold (Iminmax) for at least TMPS to be considered valid.

P67, 7 the MPS is absent when port current is less than Ihold (Iminmin).

P67, 8 the MPS is either present or absent when within Ihold (Iminmin to Iminmax).

P45, 28 mr\_mps\_valid asserts when port current exceeds Ihold for at least TMPS.

p52, 3 the state diagram moves from MONITOR\_MPS to DETECT\_MPS when the MPS is not valid (Iport < Ihold). It moves from DETECT\_MPS to MONITOR\_MPS only when Iport > Ihold and this has been true for at least TMPS.

Cl 33 SC 33.2.8.1 P57 L42 # 137  
 Schindler, Frederick Cisco Systems, Inc.

Comment Type E Comment Status A

p57, 42. Use variables.

SuggestedRemedy

Replace "6 ms" with TCLE1.

Response Response Status C

ACCEPT IN PRINCIPLE.

Replace

"Measurement of IClass shall be taken 6 ms from the application of VClass min to ignore initial transients."

with

"All measurements of Iclass shall be taken after the minimum relevant class event timing of Table 33-10. This measurement is referenced from the application of VclassMIN to ignore initial transients."

Cl 33 SC 33.2.8.1 P57 L48 # 138  
 Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status A

p57, 48. The specification requires the system to be within ICLASS\_LIM.

SuggestedRemedy

Strike "greater than or."

Response Response Status C

ACCEPT IN PRINCIPLE.

Change to "If the measured IClass is within the range of IClass\_LIM..."

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.8.2 P58 L31 # 139  
 Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status A

p58, 31. This statement is not necessary and could conflict with similar statements that use the parameter TCLE1 and TCLE2--see lines 8 and 14.

*SuggestedRemedy*

Delete this sentence, or replace it with,  
 "All measurements of Iclass shall be taken using the class event timing of table 33-10 from the application of VclassMIN to ignore initial transients.

Response Response Status C

ACCEPT IN PRINCIPLE.

Suggest: "All measurements of Iclass shall be taken after the minimum relevant class event timing of Table 33-10. This measurement is referenced from the application of VclassMIN to ignore initial transients."

Cl 33 SC 33.2.8.2 P59 L19 # 140  
 Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status A

p59, 19. A PSE physical layer classifies by measuring Iclass. When the class current measured is in between two valid class ranges the PSE may report the classes that is on either side of it. When a PSE does not measure class current or chooses not to use this measurement it may report class 0--the default class. Placing Class 0 within table 33-9 may confuse the reader. Note that a Type 1 PSE could also ignore valid class current and report class 0.

*SuggestedRemedy*

Remove "May be Class 0," in the classification column of table 33-9 except for the case when Iclass is >5.00 mA and < 8.00 mA, and replace the removed text with "May be."  
 Add a note below table 33-9 that states,  
 "Note: A Type 1 PSE may ignore Iclass and report class 0."

Response Response Status C

ACCEPT IN PRINCIPLE.

Good catch. The addition of 'Class 0' to the guardbands disregards the fact that the PSE can assign Class 0 even if it measures Class 1, 2, 3. To be complete every entry in the Classification column should have 'Class 0' first, but of course that would be silly. Better to remove the extraneous Class 0 options.

Remove "May be Class 0," in the classification column of table 33-9 except for the case when Iclass is >5.00 mA and < 8.00 mA, and replace the removed text with "Either Class" (effectively, delete '0,' in three places and '0 or' in one place). After 'Class 4' on last line add "or invalid class".  
 Add a note below table 33-9 that states,  
 "Note: A Type 1 PSE may ignore Iclass and report class 0."

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.9 P60 L12 # 141  
Schindler, Frederick Cisco Systems, Inc.

Comment Type E Comment Status A PSE  
p60, 12. Why does the specification need a static and and load regulation item listing?

SuggestedRemedy

Change references to item 2 to reference item 1. Add 33.2.9.2 to item 1 additional information. Delete item 2.

Response Response Status C

ACCEPT IN PRINCIPLE.

Change references to item 2 to reference item 1. Add 33.2.9.2 to item 1 additional information. Delete item 2.

Dynamic is used with reference to item 2 but not clearly defined. If this remdy is accepted or rejected remove reference to dynamic and clean up affected sentences. Scan text for 'dynamic' and clean up references to item 2 (in this section).

See 49 and integrated any omitted concerns.

Cl 33 SC 33.2.9 P60 L49 # 142  
Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status A PSE  
p60, 49. It is not clear that item 8, ICUT and item 13, Ptype can be less than the Table 33-11 minimum value unless a significant amount of the specification is read. The specification reader would benefit from a note warning that limits may be more restrictive than table values.

SuggestedRemedy

Add a note just below section 33.2.9 line 4 stating:  
Note: Table 33-11 limits show values that support worst-case operating limits. These ranges may be narrowed when additional information is known and applied in accordance with this specification.

Response Response Status C

ACCEPT IN PRINCIPLE.

Add to text around P60, L5 stating:  
Table 33-11 limits show values that support worst-case operating limits. These ranges may be narrowed when additional information is known and applied in accordance with this specification.

Cl 33 SC 33.2.9 P61 L18 # 143  
Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status A pics  
p61, 18. Type 1 and Type 2 device need to support a PD overload situation.

SuggestedRemedy

Add a note to the additional information section of item 21.  
Note: For practical implementations, it is recommended that Type 1 PSEs support Type 2 lumb requirements.

Response Response Status C

ACCEPT.

Cl 33 SC 33.2.9.1 P61 L41 # 144  
Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status A pics  
p61, 41. Operating limits such as power line voltage and temperature are not defined by the IEEE.  
The IEEE defines interoperability and the system designer determines over what operating range the interoperability is achieved.  
"Line" is not defined but assumed to be power supply input voltage.

SuggestedRemedy

Remove the sentence, "When measured ... shall include line and temperature variations."  
Have the Editor update the related PIC.

Response Response Status C

ACCEPT.

Cl 33 SC 33.2.9.2 P61 L48 # 145  
Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status A pics  
p61, 48. Imin2 is not defined in this draft. This variable is defined in the IEEE 802.3 specification.  
This variable was replaced with IMIN\_MAX during a draft revision.

SuggestedRemedy

Replace all occurrence of IMIN2MAX with IMIN\_MAX.  
This change is required on pages 61, 62, ...  
This comment is affected by another comment on IMIN.

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE 149.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.9.6 P63 L16 # 146  
 Schindler, Frederick Cisco Systems, Inc.  
 Comment Type **TR** Comment Status **A** PSE  
 p63, 16. Figure 33-14 provides a template that shows operating limits. It is incorrectly showing one possible implementation.  
 SuggestedRemedy  
 On Figure 33-14 replace the line from 0 s to POWER\_UP with a horizontal line drawn from 50A at 0 s to 50 A at time POWER\_UP. See a related comment for additional recommendations.  
 Response Response Status **C**  
 ACCEPT.  
 See 147.

Cl 33 SC 33.2.9.6 P63 L16 # 147  
 Schindler, Frederick Cisco Systems, Inc.  
 Comment Type **ER** Comment Status **A** PSE  
 p63, 16. POWER\_UP is a state not a time.  
 SuggestedRemedy  
 Move POWER\_UP below 0 on the x-axis of Figure 33-14. Lable this as "POWER\_UP state." The TF should decide if a note is required to clarify the use of POWER\_UP. See a related comment for additional recommendations.  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 remove POWER\_UP on the x-axis of Figure 33-14. append 'state' at the end of the figure title.

Cl 33 SC 33.2.9.7 P63 L42 # 148  
 Schindler, Frederick Cisco Systems, Inc.  
 Comment Type **ER** Comment Status **A** pics  
 p63, 42. ICUT is a current threshold that monitors Ipeak. ICUT > =Ipeak.  
 SuggestedRemedy  
 Add a sentence to the bottom of 33.2.9.7 that states: "The ICUT threshold may equal the Ipeak value determined by equation 33-3.  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.2.11.1.2 P67 L6 # 149  
 Schindler, Frederick Cisco Systems, Inc.  
 Comment Type **ER** Comment Status **A** pics  
 p67, 6. Eliminate confusing names. For example, avoid using a Imin min name and Imin max.  
 ER  
 Replace all "Imin\_max" with "Ihold\_max," and and "Imin\_min" with "Ihold\_min."  
 Replace table 33-11, p61, item 18 "Imin" with: "Ihold."  
 This comment supersedes and is related to another comment made on P61 related to Imin2.  
 SuggestedRemedy  
 Add a sentence to the bottom of 33.2.9.7 that states:  
 "The ICUT threshold may equal the Ipeak value determined by equation 33-3.

Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 The comment and remedy both contain remedy information--the comment remedy fits this comment best.  
 Replace all "Imin\_max" with "Ihold\_max," and "Imin\_min" with "Ihold\_min."  
 Replace table 33-11, p61, item 18 "Imin" with: "Ihold."  
 This comment supersedes and is related to another comment made on P61 related to Imin2.  
 Instruct the Editor to adjust affected PICs.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.3.2 P70 L7 # 150  
Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status A PD Class

p70, 7. A Type 2 PD that has not achieved mutual ID and can function as a Type 1 PD may interoperate as a Type 1 PD.  
Fix text to make the PIC easier to read.

SuggestedRemedy

Combined and adjust the sentences on lines 6 and 7 by, replacing "... restrictions. Such a PD shall..." with "... restrictions and shall..." then add sentence, Type 2 and Type 1 PDs that operate within the Type 1 requirements may provide the user with an active indicator that it is underpowered. Have the Editor update the related PIC.

Response Response Status C

ACCEPT IN PRINCIPLE.

Was

"A Type 2 PD that does not successfully observe a 2-Event Physical Layer classification or Data Link Layer classification conforms to Type 1 PD power restrictions. Such a PD shall provide the user with an active indication that it is underpowered. The method of active indication is left to the implementor."

To:

A Type 2 PD that does not successfully observe a 2-Event Physical Layer classification or Data Link Layer classification shall conform to Type 1 PD power restrictions and shall provide the user with an active indication if underpowered. The method of active indication is left to the implementor.

Editor to modify PICS as necessary

Cl 33 SC 33.3.3.3 P70 L34 # 151  
Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status A PD State Variables

p70, 34. Values for variables: mdi\_power\_required; pd\_2-event; pd\_dll\_capable; pd\_max\_power; pse\_power\_type; Vport\_PD, are implementation dependent. These are tested but not set in the state diagrams.

SuggestedRemedy

Add the following sentence immediately after each variable name.  
A variable that is set in an implementation-dependent manner.

Response Response Status C

ACCEPT IN PRINCIPLE.

Add the following statement to the descriptive paragraph of mdi\_power\_required:

A variable that is set in an implementation-dependent manner.

the others don't need changed because:

See comment 70. pd\_2-event; pd\_dll\_capable; are changed to constants.

Vport\_PD is a physical measurement. While the way it is measured is implementation dependent, the voltage is not.

pd\_max\_power;pse\_power\_type; are driven within the state machine

mdi\_power\_required is not set within the state machine, but is something that could change by some actor outside the state machine.

Cl 33 SC 33.3.3.3 P71 L11 # 152  
Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status A EZ

p71, 11. State NOT\_MDI\_POWERED does not exist.  
I believe the state NOT\_MDI\_POWERED was replaced by IDLE.

SuggestedRemedy

Replace occurrence of "NOT\_MDI\_POWERED" with "IDLE."

Response Response Status C

ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.3.3.3 P71 L17 # 153  
 Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status A EZ  
 p71, 17. These values are vague.

SuggestedRemedy

Replace "Power not" with "The PD input voltage does not meet the requirements of Table 33-18 variable Vport\_PD."  
 Replace "Power being" with "The PD input voltage meets the requirements of Table 33-18 variable Vport\_PD."

Response Response Status C  
 ACCEPT.

Cl 33 SC 33.3.5.2.1 P76 L7 # 154  
 Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status A EZ  
 p76, 7. Replace "0.25 mA minimum" with "Imark."

SuggestedRemedy

See comment.

Response Response Status C  
 ACCEPT.

Cl 33 SC 33.3.7.6 P80 L28 # 155  
 Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status A PD Transient PI  
 p80, 28. Instantaneous changes are not physically possible.

SuggestedRemedy

Delete "instantaneous" and replace it with "peak," or delete the word "instantaneous."

Response Response Status C  
 ACCEPT IN PRINCIPLE.

Change TO:

.... A Type 2 PD with peak power draw that does not exceed PClass\_PD max and has an input capacitance of 180 µF .

-----

There needs to be some indication that this is power is a real-time measurement, not an increase in the Pport (average) power.

Original paragraph:

A Type 1 PD with input capacitance of 180 µF or less requires no special considerations with regard to transients at the PD PI. A Type 1 PD with input capacitance of 180 µF or less requires no special considerations with regard to transients at the PD PI. A Type 2 PD with instantaneous power draw that does not exceed PClass\_PD max and has an input capacitance of 180 µF or less requires no special considerations with regard to transients at the PD PI. PDs that do not meet these requirements shall comply with the following.requires no special considerations with regard to transients at the PD PI. PDs that do not meet these requirements shall comply with the following."



IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.3.7.6 P80 L35 # 156  
Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status A PD Transient PI

p80, 35. Use a variables instead of fixed values. Page 80 Lines 34, 35, 44.

SuggestedRemedy

Replace "20 ohms" with Type 1 Rch (See Table 33-1).  
Replace "44 V to 57 V" with Vport\_min to Vport\_max (see table 33-11).  
Replace "12.5 ohms" with Type 2 Rch (see Table 33-1)."

Response Response Status C

ACCEPT IN PRINCIPLE.

From:

"A Type 1 PD input current shall not exceed the PD upperbound template (see Figure 33-20) after TLIM min (see Table 33-11 for a Type 1 PSE) when the following input voltage is applied. A current limited voltage source is applied to the PI through a 20 O resistance. The current limit meets Equation (33-13) and the voltage ramps from 44 V to 57 V at 2250 V/s."

To:

A Type 1 PD input current shall not exceed the PD upperbound template (see Figure 33-20) after TLIM min (see Table 33-11 for a Type 1 PSE) when the following input voltage is applied. A current limited voltage source is applied to the PI through a Rch resistance (See Table 33-1). The current limit meets Equation (33-13) and the voltage ramps from Vport\_PSE min to Vport\_PSE max (see table 33-11) at 2250 V/s.

From:

"b) The PD shall not exceed the PD upperbound template beyond TLIM min under worst case current draw when tested as follows. The input voltage source drives VPort\_PD from 50 V to 56 V at 2250 V / s, the source impedance is 12.5 O, and the voltage source limits the current to MDI ILIM per Equation (33-13)."

TO:

b) The PD shall not exceed the PD upperbound template beyond TLIM min under worst case current draw under the following conditions. The input voltage source drives VPD from Type 2 Vport\_PSE min (see table 33-11) to 56 V at 2250 V / s, the source impedance is Type 2 Rch (see Table 33-1), and the voltage source limits the current to MDI ILIM per Equation (33-13).

Editor to use artistic license to make consistent with rest of document.

Cl 33 SC 33.3.7.7 P81 L4 # 157  
Schindler, Frederick Cisco Systems, Inc.

Comment Type TR Comment Status A PD Ripple

p81, 4. Table 33-18 item 10 requires that a ripple of up to 0.2 Vpp occurs at a frequency below 150 kHz to preserve data integrity. Therefore, the allowance for item 8 di/dt of 15 mA/us is to high.  
The Vport ad hoc reported Type 1 PD, DC-DC power supplies had di/dt rates up to 7 mA/us. A high volume IP-phone tested has a di/dt rate of less than 1 mA/us.

SuggestedRemedy

Reduce Table 33-18 maximum di/dt rate to 15 x 150/478 = 4.7 mA/us.

Response Response Status C

ACCEPT IN PRINCIPLE.

Steady-state ripple current is better addressed by properly specifying the ripple voltage (then  $i = v/r$ ). Table 33-18 item 10 refers to 33.3.7.7, which states the ripple voltage must be measured at the worst case. The worst case for PD-generated noise at the PD PI is with the Rch source loop. Different test methods are possible, to avoid becoming a test procedure, add "Balanced source impedance; Rch" as additional information for item 10.

Cl 33 SC 33.3.7.10 P81 L33 # 158  
Schindler, Frederick Cisco Systems, Inc.

Comment Type TR Comment Status D PD Hard

p81, 33. Diodes with a lower voltage drop waste less power.  
Existing requirement may prevent Schottky diodes from being used.  
These diodes have a 500 uA leakage at high temperature and maximum reverse voltage.  
If a current is backfeed into the PSE port very little will occur because many systems have DC-blocking capacitors on the port termination.  
Termination resistors without DC-blocking capacitors are typically 0603 in size and have a power dissipation limit of 1/10 W.  
This corresponds to a current of 26 mA. Therefore, permitting currents of up to 0.5 mA provides 52x margin on the resistor current ability.

SuggestedRemedy

Change the 100 k ohm test resistor value to 5.6 k ohm.  
This keeps Vbfd the same and uses a standard resistor value. The maximum current possible is  $2.8V/5.6k = 0.5$  mA

Proposed Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

Commenter to withdraw per off-line conversation.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.6.2.1 P98 L3 # 159  
 Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status A  
 p98, 3. For what side of the channel are these defined?

SuggestedRemedy

Expand the sentence to read:  
 The power type/source/priority field shall contain a bit-map of the power type,  
 source and priority defined in Table 33--23, and is report for the device producing the TLV.

Response Response Status C  
 ACCEPT IN PRINCIPLE.

Expand the sentence to read:  
 The power type/source/priority field shall contain a bit-map of the power type,  
 source and priority defined in Table 33--23, and is reported for the device producing the  
 TLV.

-----  
 Either side can produce the TLV. The recommended clarification is inherent to how LLDP  
 works but is reasonable to add

Cl 33 SC 33.6.5 P100 L26 # 160  
 Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status R  
 p100, 26. Normally PSE can meet the timing requirements.

SuggestedRemedy

Replace "A Type 2 PSE shall send .." with "Under normal operation, a Type 2 PSE shall  
 send .."

Response Response Status U  
 REJECT.

This was discussed in the past. For Type 2 devices, the consensus was that there was no  
 issue in meeting the requirements over all conditions

Cl 33 SC 33.6.5 P100 L30 # 161  
 Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status A  
 p100, 30. To improve the PIC clarify the sentence.

SuggestedRemedy

Replace "A Type 1 PSE shall ..." with  
 "A Type 1 PSE that provides DLL classification shall ..."  
 Have the Editor update the related PIC.

Response Response Status C  
 ACCEPT IN PRINCIPLE.

OBE 229

-----  
 There should be a global PIC that has an optional capability for DLL classification. This  
 would eliminate the redundancy of doing this throughout the text. This could be introduced  
 at the top of the section.

Absent the above, implement the suggestion by the commenter

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.6.6.1 P101 L1 # 162  
Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status A

p101, 1. Most of the variables that provide power information do not have units or a reference to how they should be interpreted.

SuggestedRemedy

Add a sentence to the bottom of the conventions section, or add this sentence to all constants, variables, and functions that lack this information--PDMaxPowerValue; MirroredPDAllocatedPowerValue; MirroredPSEAllocatedPowerValue; TempVar; PSE\_New\_Value; pse\_power\_review; pd\_power\_review.  
"Actual power numbers are represented using an integer value that is encoded according to Equation (33--21), where X is the decimal value of the power value field being reference."

Response Response Status C

ACCEPT IN PRINCIPLE.

Add this sentence to all constants, variables, and functions that lack this information--

PDMaxPowerValue; MirroredPDAllocatedPowerValue; pd\_power\_review

"Actual power numbers are represented using an integer value that is encoded according to Equation (33--20), where X is the decimal value of the power value field being referenced."

MirroredPSEAllocatedPowerValue; TempVar; PSE\_New\_Value; pse\_power\_review;

"Actual power numbers are represented using an integer value that is encoded according to Equation (33--21), where X is the decimal value of the power value field being referenced."

Cl 33 SC 33.6.6.4 P103 L49 # 163  
Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status A

p103, 49. This is an optional timer but it has requirements and behavior associated it with it. Also see page 107, line 27.

What is the default value of an optional timer that is not implemented?  
The State diagram on figure 33-30 only works if the default value for this time is done.  
The proposed solution should enable a specification reader to see that an norealized timer is always considered done.

SuggestedRemedy

Add a sentence to the end of the timer description: "The default state for this time is power\_change\_timer\_done."

Response Response Status C

ACCEPT IN PRINCIPLE.

A PSE providing more power than the PD has requested when the PSE/PD SMs are out of sync is a non-realizable situation and therefore can be removed.

remove definition of power\_change\_time on P103, L49.  
in SM fig 33-30, remove '+ power\_change\_timer\_done' from the transition between states PSE POWER REVIEW and PSE POWER REALLOCATION.  
Remove '\* power\_change\_timer\_not\_done' from the transition between PSE POWER REVIEW and RUNNING. Strike 'START power\_change\_timer' from PSE POWER REALLOCATION state.

Cl 33 SC 33.6.6.6 P105 L18 # 164  
Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status A

p105, 18. CHANGE is not defined anywhere.

SuggestedRemedy

Define change in 33.6.6.1, or used the preferred solution of using the not-equal operator.  
Replace  
(MirroredPDRequestedPowerValue CHANGED)  
with (MirroredPDRequestedPowerValue [not equal] PSE\_New\_value)

Response Response Status C

ACCEPT IN PRINCIPLE.

In the INITIALIZE state, add TempVar <- PSE\_INITIAL\_VALUE

change "MirroredPDRequestedPowerValue CHANGED" to  
"MirroredPDRequestedPowerValue != TempVar"

also strike "TempVar <- PDRequestedPowerValueEcho" in PSE\_POWER\_REVIEW

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.6.6.6 P106 L16 # 165  
Schindler, Frederick Cisco Systems, Inc.

Comment Type ER Comment Status A

p106, 16. CHANGE is not defined anywhere.

SuggestedRemedy

Define change in 33.6.6.1, or used the preferred solution of using the not-equal operator.  
Replace  
(MirroredPSEAllocatedPowerValue CHANGED)  
with (MirroredPSEAllocatedPowerValue [not equal] PD\_New\_value)

Response Response Status C

ACCEPT IN PRINCIPLE.

Editor: make this change after making other chagnes to PD SM.

In the INITIALIZE state, add TempVar <- PD\_INITIAL\_VALUE

change "MirroredPSEAllocatedPowerValue CHANGED" to  
"MirroredPSEAllocatedPowerValue != TempVar"

Cl 25 SC 25.4.4a.1 P19 L51 # 166  
Darshan, Yair Microsemi Corporation

Comment Type E Comment Status A EZ

\*\*\* Comment submitted with the file 31476500024-Modifiedfigure25-1Rev003.pdf attached  
\*\*\*

Draft D4.0 (SA) Note 1 page 19 line 51 says:  
(This comment is replacing other similar comment that I have sent on the subject)  
"NOTE 1-The value of the 100 ohm termination resistor can be adjusted to compensate for the test circuit resistance.  
The test circuit resistance should exceed 2 kohm."  
Following my objective of clarifying the text in order to reduce the amount of test conditions interpretations I am suggesting to modify figure 25-1 for better clarity:  
1. Mark were the PI starts and ends as we did in other drawings.  
2. Add the label "Termination" near the 100 ohm resistor

SuggestedRemedy

Modify figure 25-1 for better clarity as follows (see attached file: modified figure 25-1 rev 003.pdf):  
-Mark were the PI starts and ends as we did in other drawings.  
-Add the label Termination near the 100 ohm resistor

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE 30, 219, 214

Cl 33 SC 33.8.3.10 P127 L17 # 167  
Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status A TEZ

The PICS defines 30sec between TLVs and it is in aligned with the defaults of 802.1AB.  
However in 33.6.5 page 100 line 26 the time is 10sec max.  
See multiple occurrences in 33.6.5 for 10sec max.

SuggestedRemedy

Decide if it is 30 or 10sec.  
It seems that 30sec is the right value.

Response Response Status C

ACCEPT IN PRINCIPLE.

See 312

Cl 33 SC 33.2.9.6 P62 L38 # 168  
Darshan, Yair Microsemi Corporation

Comment Type ER Comment Status A EZ

Draft D4.0 33.2.9.6 p. 62 line 38  
The description of the POWER\_UP is not complete (regarding PD inrush current) however instead of changing the text it will be easier to use make a reference to an existing text in other location that completes it as in 33.3.7.3 p.78 line 26.

SuggestedRemedy

Change lines 37 38 from:  
"POWER\_UP mode occurs between the PSE's transition to the POWER\_UP state and either the expiration of TInrush or the conclusion of PD inrush currents."  
To:  
"POWER\_UP mode occurs between the PSE's transition to the POWER\_UP state and either the expiration of TInrush or the conclusion of PD inrush currents (see 33.3.7.3)."

Response Response Status C

ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC Table 33-7 P56 L29 # 169  
 Beia, Christian STMicroelectronics

Comment Type TR Comment Status D

I don't see the reason for Table 33-7 to contain a link to table 33-11 instead of straight numbers. It only adds difficulties for the reader.

SuggestedRemedy

Replace Ptype with: 15.4W for Type1 PSEs, 30W for Type2 PSEs. Use two lines for Type 1 and Type 2

Proposed Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

Ptype is not a number in Table 33-11 but instead an equation. While we agree that the level of misdirection in this standard is high, we have agreed to many times before to keep things defined in one place so as to be sure that there aren't conflicting definitions in the standard.

Cl 33 SC 33.3.5.1 P75 L1 # 170  
 Beia, Christian STMicroelectronics

Comment Type TR Comment Status A

Since the definition of a 1-Event class signature is the response of a (whatever) PD to 1-Event classification, paragraph 33.3.5.1 should describe the behavior of Type 2 PDs as well. Alternatively, modify the definition of 1-event class signature in clause 1.4

SuggestedRemedy

Rewrite the sentence to the following: A Type 1 PD shall return class 0 to 3 signature and a Type 2 PD shall return a class4 signature in accordance...

Response Response Status C

ACCEPT IN PRINCIPLE.

resolve in conjunction with comment 173.

PDs implementing a 2-Event class signature shall return a Class 4 classification signature in accordance with the maximum power draw, PClass\_PD, as specified by Table 33-18. Since 1-Event classification is a subset of 2-Event classification, Type 2 PDs respond to 1-Event classification with Class 4. Type 1 PDs may choose to implement 2-Event classification and return class 0, 1, 2, or 3 in accordance with the maximum power draw. The Type 2 PD's classification behavior shall conform to the Figure 33-18 state diagram and the electrical specifications defined by Table 33-17.

Cl 33 SC 33.3.5.2 P75 L23 # 171  
 Beia, Christian STMicroelectronics

Comment Type TR Comment Status A

Only Type 2 PDs are allowed to return class4, while Type1 PDs may optionally implement 2-Event class signature (as per the permutation table 33-8) returning classes 0-3

SuggestedRemedy

Replace "PDs implementing a 2-Event class signature" with "Type2 PDs".

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE 170

-----  
 Good catch. T33-8 does allow:  
 type 1 2-event=n pd allowed=y  
 type 1 2-event=y pd allowed=y

But the suggested remedy doesn't fix address the Type 1 PD that performs 2-event.

Insert as the second sentence in the paragraph starting on L23: "Type 1 PDs may choose to implement 2-Event classification and return class 0, 1, 2, or 3 in accordance with the maximum power draw."

Cl 33 SC 33.3.5.2 P75 L24 # 172  
 Beia, Christian STMicroelectronics

Comment Type TR Comment Status A

Only type 2 PDS are required to comply with table 33-17

SuggestedRemedy

Change the sentence to: The Type 2 PD's classification behavior shall conform ..

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE 170

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.3.5.2 P75 L25 # 173  
 Beia, Christian STMicroelectronics

Comment Type T Comment Status A  
 The shall statement for a PD to conform with the state diagram in figure 33-18 is already present in 33.3.3

SuggestedRemedy  
 Remove " the figure 33-18 state diagram" to read: "PD's classification behavior shall conform to the electrical specifications defined by Table 33-17"

Response Response Status C  
 ACCEPT IN PRINCIPLE.

resolve in conjunction with comment 170.

strike "the Figure 33–18 state diagram and" from the sentence.  
 Add sentence to end of 33.3.5: "PD classification behavior conforms to the state diagram in Figure 33-18."

additionally on P60, L3, strike:"Figure 33–9, Figure 33–10, and Figure 33–11."  
 Add sentence to beginning of 33.2.9: "PSE behavior conforms to the state diagrams in Figure 33–9, Figure 33–10, and Figure 33–11. "

Cl 33 SC 33.3.2 P69 L52 # 174  
 Beia, Christian STMicroelectronics

Comment Type TR Comment Status A PD General  
 The first description of PD Types is related to 1-event or 2-event classification. This is not wrong, but neither the main feature. The real distinction is the maximum drawn power.

SuggestedRemedy  
 Add a sentence as the following: PDs that expect to draw from the PSE a maximum power up to 13W are known as Type1. PDs that expect to draw from the PSE a maximum power up to 25.5W are known as Type2.

Response Response Status C  
 ACCEPT IN PRINCIPLE.

add to the end of sentence at P69, L51: "The main distinction between Type 1 and Type 2 PDs is the maximum permissible power draw."

change text:  
 From:  
 "Type 1 PDs implement 1-Event Physical Layer classification."

"Type 2 PDs implement both 2-Event Physical Layer classification (see 33.3.5.2) and Data Link Layer classification (see 33.6)."

To:  
 Type 1 PDs implement a minimum of 1-Event Physical Layer classification and advertise hardware class 0-3.

Type 2 PDs implement both 2-Event Physical Layer classification (see 33.3.5.2) and Data Link Layer classification (see 33.6) and advertise hardware class 4.

Cl 33 SC 33.3.2 P69 L53 # 175  
 Beia, Christian STMicroelectronics

Comment Type T Comment Status A PD General  
 As per permutation table 33-8 a Type 1 PD is allowed to show a 2-event class signature.

SuggestedRemedy  
 Change the sentence to: Type 1 PDs implement 1-Event or 2-Event class signature.

Response Response Status C  
 ACCEPT IN PRINCIPLE.

OBE 174

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.3.2 P70 L1 # 176  
 Beia, Christian STMicroelectronics

Comment Type E Comment Status R PD Class

By definition, PDs implement Class signature and not classification (The definition for 1 or 2-Event classification is the application of a class event) so the sentence is inaccurate

SuggestedRemedy

Replace "Type 2 PDs implement 2-Event Physical Layer Classification" with "Type 2 PDs implement 2-Event class signature"

Response Response Status C

REJECT.

This is a matter of symantics. There is a protocol (voltage qualification or qualification and sequential state machine) associated with providing multiple signatures. The usage of "classification" implies both the protocol and the actual signature.

Cl 33 SC 33.4.1 P82 L34 # 177  
 Maytum, Michael Bourns, Inc.

Comment Type TR Comment Status R

Subclause 5.2.2 of IEC 60950-1 specifies an insulation test voltage of a)1500 V rms or a DC voltage at least equal to the peak AC voltage e.g. b)2250 V dc. Impulse test of c)1500 V, 10/700 completely fails to reach the 2250 V peak stress voltage of tests a) and b). The TNV-1 CIRCUIT or a TNV-3 CIRCUIT voltage level of 1.5 kV is based on ITU-T K.21 Resistibility of telecommunication equipment installed in customer premises to overvoltages and overcurrents. In K.21 the assumed primary protector let-through voltage of 1.5 kV sets the 1.5 kV test level of K.21 test 2.1.1.b (basic). In the case of Ethernet circuits primary protectors are not installed, which will increase the inherent impulse voltage level. Conversely most Ethernet wiring is internal, which will decrease the impulse voltage level. For unprotected TNV-1 interfaces ITU-T K.21 specifies a higher level 6 kV (enhanced). A US telecommunication supplier has found it necessary to increase internal port withstand test level from 1.5 kV to 6 kV for their fibre to the home installations to reduce failures.

SuggestedRemedy

Change the option c) 1500 V 10/700 test level to 2250 V 10/700

Response Response Status W

REJECT.

These are well established parameters set forth by the IEEE as minimum functional requirements and are not replacements for safety (or other) requirements that may need to be met by a specific product in a specific jurisdiction. IEC 60950-1 is only referenced for the methodologies.

See 178, which is the identical comment without a remedy.

Cl 00 SC 0 P L # 178  
 Maytum, Michael Bourns, Inc.

Comment Type GR Comment Status R

The impulse value of 1.5 kV 10/700 is too low for the above reasons. Compliance only to the lower 1.5 kV 10/700 condition allows manufacturers to reduce insulation withstand voltage and potentially expose users to greater hazards.

SuggestedRemedy

Response Response Status W

REJECT.

Comment makes reference to another comment and offers no solution. Contextually, this is a duplicate of comment 177 (the referred to comment) and therefore this comment is unnecessary.

Cl 01 SC 1.4 P17 L27 # 179  
 Jones, Chad Cisco Systems, Inc.

Comment Type E Comment Status A

The rest of these definitions have the format '(See IEEE 802.3, Clause 33)' while 1-event and 2-event says as described in 33.2.8. Shouldn't we be consistent?

SuggestedRemedy

change to (See IEEE 802.3, Clause 33, Subclause 2.8) in two places. (line 27 and Line 32)

Response Response Status C

ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 25 SC 25.4.4a P19 L11 # 180  
 Jones, Chad Cisco Systems, Inc.

Comment Type **TR** Comment Status **A** 100BTX  
 Four new shalls in this new text.

SuggestedRemedy  
 Ensure PICS cover the shalls P19, L11, L13, L19; P20, L5

Response Response Status **C**  
 ACCEPT IN PRINCIPLE.

Work with Gerry to find appropriate place for new PICS:

A receiver in a Type 2 Endpoint PSE or Type 2 PD meets the requirements of 25.4.5a.

A transmitter in a Type 2 Endpoint PSE or Type 2 PD delivering or accepting more than 13.0 W average power meets either the Open Circuit Inductance (OCL) requirement in 9.1.7 of TP-PMD, or meets the requirements of 25.4.4a.1.

Figure 25-1, equivalent system time constant, greater than 2.4  $\mu$ s when calculated using measurement points A and C.

A 100BASE-TX PMD in a Type 2 Endpoint PSE or Type 2 PD meets differential voltage signals received at the MDI that were transmitted from a remote transmitter within the specifications of Clause 25 and have passed through a link specified in 25.4.6 are translated into one of the PMD\_UNITDATA.indicate messages with a bit error ratio less than 10<sup>-9</sup> after link reset completion.

Cl 33 SC 33.1.4 P37 L53 # 181  
 Jones, Chad Cisco Systems, Inc.

Comment Type **E** Comment Status **A** EZ  
 "related to but not equivalent to the" -- Missing commas?

SuggestedRemedy  
 related to, but not equivalent to, the...

Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.2.6.1 P53 L48 # 182  
 Jones, Chad Cisco Systems, Inc.

Comment Type **ER** Comment Status **A** EZ  
 (as specified in and Table 33--14) -- extra 'and'

SuggestedRemedy  
 delete and: "(as specified in Table 33--14)."

Response Response Status **C**  
 ACCEPT.

OBE 43

Cl 33 SC 33.2.11 P66 L34 # 183  
 Jones, Chad Cisco Systems, Inc.

Comment Type **E** Comment Status **A** EZ  
 a condition exists, conditions exist

SuggestedRemedy  
 replace exists with exist.

Response Response Status **C**  
 ACCEPT.



IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.3.7.1 P77 L51 # 184  
 Jones, Chad Cisco Systems, Inc.

Comment Type T Comment Status D PD Startup

Von is 42.0V. Vport\_pd min for a T2 PD is 42.5V. The 'must turn on' range does not include the operational range of the Type 2 PD.

SuggestedRemedy

Raise Von to 43V to include the lower operational limit of Type 2 PDs

Proposed Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

1) A type 2 PD has to work as a type 1 PD under some cases, therefore it has to meet the (.af) startup requirements of T33-18 item11.

Practically speaking, startup transitions occur with a PD at very low current when the PSE voltage is brought to its minimum. This eliminates the loop IR drop, and assures a PD startup.

See also comment 251 that requires specifies Von as a minimum voltage for start and VportPD as static voltage afterwards.

Cl 33 SC 33.3.7.2.1 P78 L14 # 185  
 Jones, Chad Cisco Systems, Inc.

Comment Type TR Comment Status A PD Pport

Pport\_PD shall be measured when the PD is fed by VPort\_PD min to VPort\_PD max with RCh (as defined in Table 33--1) in series. -- If you are talking about the PD PI, Rch is not in series. PD port power and voltage already discounts the cable loss.

SuggestedRemedy

remove \_PD in two spots in sentence on L14

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE 216

Cl 33 SC 33.2.4.6 P49 L34 # 186  
 Jones, Chad Cisco Systems, Inc.

Comment Type T Comment Status A EZ

This is the first mention of mutual identification, before it is defined.

SuggestedRemedy

add (see 33.2.8) after mutual identification

Response Response Status C

ACCEPT.

Cl 33 SC 33.2.8 P55 L41 # 187  
 Jones, Chad Cisco Systems, Inc.

Comment Type T Comment Status A

This is the definition of mutual identification and it seems to be incomplete

SuggestedRemedy

add after "PDs." on L43: "PDs or PSEs that do not implement classification will not be able to complete mutual identification and can only perform as a Type 1 device."

Response Response Status C

ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

CI 33 SC 33.2.9 P60 L1 # 188  
 Darshan, Yair Microsemi Corporation

Comment Type GR Comment Status D pics

Draft D4.0 Table 33-11 items 1,6,7

When I reviewed the PSE and PD specifications during startup, I have noticed that there is a big difference between the energy dissipated at the PD per Table 33-18 items 1,5 and 50msec (PD spec) and what is specified for The PSE spec in Table 33-11 items 1,6,7 at the same time.

Example:

PD worst case numbers: 0.4Ap, 0.05sec, Vport 36V to 57V.

Cable: 0.4A to 0.45A for 0.05sec to 0.075sec, Rch=20 ohms.

If we add the energy dissipated in PD and Cable and compare it to the PSE numbers (44V-57V, 0.4A to 0.45A, 0.05s to -.075sec) we get huge difference which can never be used but hence not a cost effective requirement.

In order to solve this we can just add simple text at the PSE part during power up which requires that POWER\_UP parameters shall be tested with a PD load that meets the above PD parameters per Table 3-18 specifications.

SuggestedRemedy

Add the following text at 33.2.9.6 after line 40:

"The specifications for linrush and Tinrush shall be met when PSE is connected to a load that meets Table 33-18 items 1,2,9 and 33.3.7.3."  
 or better text.

Proposed Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

The heat dissipated during inrush:

$V_{pse} < 10\text{ V}$ , 10 mA

$10\text{ V} < V_{pse} < 30\text{ V}$ , 60 mA

$30\text{ V} < V_{pse} < 57\text{ V}$ , 400 mA

$V_{ds} = 57 - V_{pse}$

Note that as the current requirement increase,  $V_{ds}$  decreases.

In the worst-case where 0 to 30 V occurs in 0 time:

$(57 - 30) \times 0.4 \times 0.05 = 0.54\text{ J}$

The worst-case system is:

A PD that has 180 uF and is drawing some power.

If a PD is just a 180 uF cap. then it takes  $180 \times 20 \times 4 = 14.4\text{ ms}$  to charge up.

The excess power is used to power the PD.

CI 33 SC 33.3.7 P77 L22 # 189  
 Darshan, Yair Microsemi Corporation

Comment Type E Comment Status A EZ

Draft D4.0 (SA)

Table 33-18 item 9: There is missing information regarding the maximum PD capacitance which is limited by item 5 (PD inrush current of 0.4A as specified in 33.3.7.3)

SuggestedRemedy

Add to the additional information column for item 9:

See 33.3.7.3

Response Response Status C

ACCEPT.

CI 30 SC 30.2.5 P26 L26 # 190  
 Mahinfallah, Ahmad Cisco Systems, Inc.

Comment Type TR Comment Status A 86

It is required to have a defined and unique PD model number if aPDModelNumber is to be used.

SuggestedRemedy

Provide for a well-defined and unique PD model number.

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE 86 which deleted the attribute.

CI 30 SC 30.2.5 P26 L26 # 191  
 Mahinfallah, Ahmad Cisco Systems, Inc.

Comment Type ER Comment Status A 86

What is meant by this comment "aPDReducedOperationPowerValue does not belong to any package"?

SuggestedRemedy

Please define and elaborate.

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE 254

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.9 P60 L13 # 192  
 Mahinfallah, Ahmad Cisco Systems, Inc.  
 Comment Type E Comment Status A pics  
 Vport is used in previous sections, but it is defined later in this section.  
 SuggestedRemedy  
 Define Vport in the first place it appears in the document.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 OBE 90.

Cl 33 SC 33.8.3.10 P127 L1 # 193  
 Mahinfallah, Ahmad Cisco Systems, Inc.  
 Comment Type TR Comment Status A TEZ  
 Item DLL4, DLL6, DLL8, DLL12 and DLL15 are incorrect and have not been updated.  
 SuggestedRemedy  
 Update these DLLs.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 See 312, 313, 314, 318

Cl 33 SC 33.4.4 P86 L8 # 194  
 Law, David 3Com  
 Comment Type T Comment Status A  
 The value for the capacitor shown in Figure 33-24 (lines 8 and 27) is not provided.  
 SuggestedRemedy  
 As is done in Figure 33-23 add a '\*\*\*' to both these capacitors and a note in the figure that states '\*\*\* Capacitor impedance less than 1 Ohm from 1 MHz to 100 MHz'  
 Response Response Status C  
 ACCEPT.  
 See 210

Cl 33 SC 33.4.4 P86 L35 # 195  
 Law, David 3Com  
 Comment Type E Comment Status A EZ  
 Add a note to define DUT  
 SuggestedRemedy  
 Add a note that reads 'DUT - Device under test'.  
 Response Response Status C  
 ACCEPT.

Cl 33 SC 33.4.2 P83 L43 # 196  
 Law, David 3Com  
 Comment Type E Comment Status A EZ  
 Generally clauses other than 33, the 'cm' of 'Ecm' is a subscript.  
 SuggestedRemedy  
 Change the 'cm' of 'Ecm' to be a subscript. If this change is made also change the 'cm\_out' of 'Ecm\_out' and the 'dif' of 'Edif' to be subscripts.  
 Response Response Status C  
 ACCEPT.

Cl 33 SC 33.4.3 P84 L46 # 197  
 Law, David 3Com  
 Comment Type T Comment Status A  
 Is Edif '.. the resulting wave-form due ..' or rather a voltage of the resulting wave-form, also the Edif definition references the '.. applied sine wave.' but there is no mention of the a sine wave elsewhere. Finally Edif is also shown in Figure 33-22.  
 SuggestedRemedy  
 Change Ecm and Edif to read:  
 Ecm is the externally applied sine wave voltage as shown in Figure 33-22.  
 Edif is the voltage of the resulting wave-form due only to the applied sine wave measured as shown in Figure 33-22.  
 Response Response Status C  
 ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.4.2 P84 L14 # 198  
Law, David 3Com

Comment Type T Comment Status A

The common mode ground reference is labeled as 'PG' however PG is the 'Protective Ground' of the AUI connector (see 7.5.2). This is therefore is only relevant to 10BASE-T MAU with an AUI connector. 10BASE-T covers the case of an embedded MAU by stating in subclause 14.3 'MAU electrical specifications' that 'The ground for all common-mode tests is circuit PG, Protective Ground of the AUI. In implementations without an AUI, chassis ground is used as circuit PG.'. The label PG does not appear in any of the other common-mode related figures.

SuggestedRemedy

At a minimum remove the label PG from this figure as it isn't included in the other common-mode related figures and doesn't appear anywhere else in the draft. Text similar to that found in 1000BASE-T subclause 40.6 'PMA electrical specifications' that reads 'Common-mode tests use the common-mode return point as a reference.' can be added to subclause 33.4 if there is a desire to define the common-mode reference point.

Response Response Status C

ACCEPT IN PRINCIPLE.

Remove 'PG' from Figure 33-21.

Cl 33 SC 33.4 P82 L21 # 199  
Law, David 3Com

Comment Type E Comment Status A EZ

10BASE-T is a MAU and 100BASE-T and 1000BASE-T are PHYs.

SuggestedRemedy

Change '.. of the PHYs of 10BASE-T, 100BASE-TX, and 1000BASE-T.' to read '.. of the 10BASE-T MAU and the 100BASE-TX, and 1000BASE-T PHYs.'

Response Response Status C

ACCEPT.

Cl 33 SC 33.4.1.1.1 P83 L10 # 200  
Law, David 3Com

Comment Type T Comment Status A

The isolation requirements for 100BASE-T are provided in subclause 25.4.5 and not in the TP-PMD specification.

SuggestedRemedy

Change 'TP-PMD' to read 25.4.5 here and also on line 24 of subclause 33.4.1.1.2 below.

Response Response Status C

ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general  
COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn  
SORT ORDER: Comment ID

Cl 33 SC 33.4.1.1.1 P83 L11 # 201  
Law, David 3Com

Comment Type E Comment Status A

Suggest that '.. multiple instances of PSE and/or PD shall meet ..' should read 'multiple instances of PSE, PD or both, shall meet ..'

SuggestedRemedy

Change '.. multiple instances of PSE and/or PD shall meet ..' should read 'multiple instances of PSE, PD or both, shall meet ..' here and on line 25 of subclause 33.4.1.1.2 below.

Response Response Status C

ACCEPT.

Cl 33 SC 33.4.1.1.1 P83 L10 # 202  
Law, David 3Com

Comment Type T Comment Status A

I am not aware of any 'medium standard' that we reference that requires the medium itself to meet any particular isolation requirement and therefore suggest that this be removed from the list.

SuggestedRemedy

Change the text '.. requirements of the basic MAU/PHY/medium standard.' to read '.. requirements of the MAU or PHY.' here and also on line 23 of subclause 33.4.1.1.2 below.

Response Response Status C

ACCEPT.

See 206

Cl 33 SC 33.4.2 P83 L36 # 203  
Law, David 3Com

Comment Type E Comment Status A EZ

A more direct reference for 100BASE-T, rather than simply Clause 25, would be to subclause 25.4.

SuggestedRemedy

Change '(See 14.3.1.2.7, Clause 25, and 40.8.3.4.)' to read '(See 14.3.1.2.7, 25.4, and 40.8.3.4.)'.

Response Response Status C

ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.4.2 P83 L35 # 204  
 Law, David 3Com

Comment Type T Comment Status A

This subclause states 'Each wire pair of the PSE or PD when it is encompassed within the MDI shall ..' however PSE and PD's don't have wire pairs, the PI does. Also the based on the Subclause 1.4.282 'Power Interface (PI)' definition 'In an Endpoint PSE and in a PD the Power Interface is the MDI.'. This subclause states that 'When a PSE is not encompassed within an MDI ..', similarly a PSE can't be encompassed into a MDI. Suggest the condition be that a PI is also a MDI - or not - and that we be clear what we are really talking about is an Endpoint or a Midspan.

SuggestedRemedy

Suggest the text 'Each wire pair of the PSE or PD when it is encompassed within the MDI shall ..' is changed to read 'Each wire pair of the PI, when it is also an MDI (i.e., an Endpoint PSEs and PDs), shall ..' and that the text 'When a PSE is not encompassed within an MDI, the PSE PI shall ..' be changed to read 'When a PI is not an MDI (i.e., an Midspan PSE), , the PI shall ..' The resultant new paragraph would read: 'Each wire pair of the PI, when it is also an MDI (i.e., an Endpoint PSEs and PDs), shall meet the fault tolerance requirements of the appropriate specifying clause (see 14.3.1.2.7, 25.4, and 40.8.3.4.). When a PSE PI is not an MDI (i.e., an Midspan PSE), the PSE PI shall meet the fault tolerance requirements of this subclause.'

Response Response Status C  
 ACCEPT IN PRINCIPLE.

Change the text 'Each wire pair of the PSE or PD when it is encompassed within the MDI shall ..'  
 To: 'Each wire pair of the PI, when it is also an MDI (i.e., an Endpoint PSE or PD), shall ..'

Change the text 'When a PSE is not encompassed within an MDI, the PSE PI shall ..'  
 To: 'When a PI is not an MDI (i.e., a Midspan PSE), , the PI shall ..'

Cl 33 SC 33.4.2 P83 L44 # 205  
 Law, David 3Com

Comment Type T Comment Status A TEZ

This paragraph states that the impulse be applied '.. of either polarity (as indicated in Figure 33--21),' yet I don't see any polarity indicated in Figure 33-21. The same paragraph states later that the impulse is applied '.. as shown in Figure 33--21.' so this first reference to Figure 33-21 in this paragraph seems redundant.

SuggestedRemedy

Delete the text '(as indicated in Figure 33--21)'

Response Response Status C  
 ACCEPT.

Cl 33 SC 33.4.3 P84 L30 # 206  
 Law, David 3Com

Comment Type E Comment Status A

At 10Mb/s it is a MAU rather than a PHY.

SuggestedRemedy

Change '.. 10 Mb/s PHY' to read '.. 10Mb/s MAU'.

Response Response Status C  
 ACCEPT.

See 202

Cl 33 SC 33.3.7.6 P80 L43 # 207  
 Law, David 3Com

Comment Type T Comment Status A PD Transient PI

Since this isn't a conformance test specification, but an interoperability specification, it is best if we can avoid specifying in terms of test conditions, but instead in terms of the conditions under which the specification shall be met.

SuggestedRemedy

Change '.. when tested as follows.' to read '.. under the following conditions.'

Response Response Status C  
 ACCEPT IN PRINCIPLE.

OBE 156

Cl 33 SC 33.4.4 P85 L45 # 208  
 Law, David 3Com

Comment Type T Comment Status A

Since this isn't a conformance test specification, but an interoperability specification, it is best if we can avoid specifying in terms of test conditions, but instead in terms of the conditions under which the specification shall be met.

SuggestedRemedy

Change 'The PIs shall be tested with the PHY transmitting data, an operating PSE or PD, and with the following PSE load or PD source requirements:' to read 'The common-mode AC output voltage shall be measured under while the PHY is transmitting data, the PSE or PD is operating, and has the following PSE load or PD source:'. Also change 'When testing .. ' to read 'For a ..' in both items 1) and 2).

Response Response Status C  
 ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.4.6 P87 L36 # 209  
 Law, David 3Com

Comment Type T Comment Status A

Since this isn't a conformance test specification, but an interoperability specification, it is best if we can avoid specifying in terms of test conditions, but instead in terms of the conditions under which the specification shall be met.  
 In addition subclause 33.4.4 items 1) and 2) already specify that the PD or PSE has to be terminated as illustrated in Figure 33-24 so it is not necessary to state this again in this paragraph.

SuggestedRemedy

Suggest that the entire subclause be changed to simply read 'The coupled noise, Ed\_out in Figure 33-24, from a PSE or PD to the differential transmit and receive pairs shall not exceed 10 mV peak-to-peak when measured from 1 MHz to 100 MHz under the conditions specified in 33.4.4, item 1) and item 2)'.  
 The PICS will need a similar update.

Response Response Status C  
 ACCEPT.

Cl 33 SC 33.4.5 P87 L8 # 210  
 Law, David 3Com

Comment Type T Comment Status A

The value for the capacitor shown in Figure 33-24 (lines 8 and 27) is not provided.

SuggestedRemedy

As is done in Figure 33-23 add a '\*\*\*' to both these capacitors and a note in the figure that states '\*\*\* Capacitor impedance less than 1 Ohm from 1 MHz to 100 MHz'

Response Response Status C  
 ACCEPT.  
 It's figure 33-25.  
 See 194

Cl 33 SC 33.4.5 P87 L3 # 211  
 Law, David 3Com

Comment Type T Comment Status A

Since a PI is defined in Subclause 1.4.282 'Power Interface (PI)' defines a PI as 'The mechanical and electrical interface between the Power Sourcing Equipment (PSE) or Powered Device (PD) and the transmission medium. In an Endpoint PSE and in a PD the Power Interface is the MDI.' the marking of PI A and PI B in Figure 33-25 implies that the measurement is being performed between two separate PSEs or PDs on a NID rather than different PI wire pairs on the same PSE or PD. Since I think the latter is the intent here the labels A and B should be deleted and the two dotted lines should be joined.

SuggestedRemedy

Change 'PI A' to read 'PI' and delete 'PI B' from the figure, join the two dotted lines to form one single dotted line.

Response Response Status C  
 ACCEPT.

Cl 33 SC 33.1.3 P37 L8 # 212  
 Law, David 3Com

Comment Type T Comment Status A

In IEEE Std 802.3af the similar figure for the Midspan PSEs made it clear that power was only supplied from the PSE to the PD - this was simple since the 'spare pairs' we 'broken' in the PSE and only the ones connecting to the PI were powered. Now in the case of IEEE 802.3at Midspans, the use of transformer coupling or other techniques, allows power to be supplied on the 'data pair' if desired. I however still think there is merit to indicate in this figure that power is only sourced in the direction of the PI so an initial reader will capture this concept from the diagram.

SuggestedRemedy

Suggest that the two vertical lines connecting the PSE box in the Midspan to the wire be changed to curved lines curving in the direction of the PI - or alternatively use something similar to the bus rippers symbol found in schematics - after all we are only powering half of the 8 wires in the 'bus'.

Response Response Status C  
 ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 25 SC 25.4.4a P19 L18 # 213  
 Law, David 3Com

Comment Type T Comment Status A TEZ

Since this isn't a conformance test specification, but an interoperability specification, it is best if we can avoid specifying in terms of test conditions, but instead in terms of the conditions under which the specification shall be met.

*SuggestedRemedy*

Suggest that '.. using the fixture shown ..' should read '.. using the reference circuit shown ..'. In addition delete Note 1 as this relates to one of the factors the implementer has to account for during implementation of the reference circuit and there are other - such as the effects of the measurement equipment used - that also have to be considered which are not covered in the notes.

Response Response Status C  
 ACCEPT.

Cl 25 SC 25.4.4a.1 P19 L34 # 214  
 Law, David 3Com

Comment Type E Comment Status A EZ

There should be a separate figure numbers and titles for the transmitter load circuit diagram and the time constant measurement diagram.

*SuggestedRemedy*

Add a title to the upper diagram that reads 'Type 2 system time constant test load' and change the title to the second diagram to read 'Type 2 system time constant measurement'.

Response Response Status C  
 ACCEPT.

Cl 33 SC 33.4.9.2.1 P91 L32 # 215  
 Law, David 3Com

Comment Type T Comment Status A

The decision to perform independent third party compliance testing is up to the implementer however the start of this paragraph which reads 'Compliance testing shall be performed by applying ..' could be misread to imply it is required by the standard. Since this isn't the normal wording used for normative requirements such as these suggest that this subclause be merged with the previous subclause.

*SuggestedRemedy*

Change the title 'Alternative A Midspan PSE compliance test setup' to read 'Alternative A Midspan PSE signal path transfer function', change 'Compliance testing shall be performed by ..' to read 'The transfer function is measure by ..' and change 'The transfer function shall be measured from the output termination to the Midspan PSE input.' to read 'The transfer function is defined from the output termination to the Midspan PSE input.'.

Response Response Status C  
 ACCEPT.

Cl 33 SC 33.3.7.2.1 P78 L13 # 216  
 Law, David 3Com

Comment Type T Comment Status A PD Pport

Since this isn't a conformance test specification, but an interoperability specification, it is best if we can avoid specifying in terms of test conditions, but instead in terms of the conditions under which the specification shall be met.

*SuggestedRemedy*

Change 'PPort\_PD shall be measured when the PD is fed by VPort\_PD min to VPort\_PD max with RCh (as defined in Table 33-1) in series. PPort\_PD is defined as:' to read 'When the PD is fed by VPort\_PD min to VPort\_PD max with RCh (as defined in Table 33-1) in series PPort\_PD shall be defined as:'

Response Response Status C  
 ACCEPT IN PRINCIPLE.

Change 'PPort\_PD shall be measured when the PD is fed by VPort\_PD min to VPort\_PD max with RCh (as defined in Table 33-1) in series. PPort\_PD is defined as:'

to read 'When the PD is fed by Vport\_PSE min to Vport\_PSE max with RCh (as defined in Table 33-1) in series PPort\_PD shall be defined as:'

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.3.7.2.1 P78 L13 # 217  
 Law, David 3Com

Comment Type T Comment Status A PD Pport

The text '.. when the PD is fed by VPort\_PD min to VPort\_PD max with RCh ..' doesn't make it clear if VPort\_PD is to be applied to the PD through RCh or if a voltage is applied through RCh to achieve Vport\_PD at the PD. I suspect it is the latter.

SuggestedRemedy

Change '.. when the PD is fed by VPort\_PD min to VPort\_PD max with RCh ..' to read '.. when VPort\_PD min to VPort\_PD max is applied to the PD through a source resistance of RCh ..'.

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE 216

Cl 25 SC 25.4.4a.1 P19 L42 # 218  
 Law, David 3Com

Comment Type E Comment Status A 100BTX

The equation should be placed in the text flow with definitions of the parameter used.

SuggestedRemedy

See comment.

Response Response Status C

ACCEPT IN PRINCIPLE.

Suggested text below. Also see 122, 214.

Point B is the point of maximum baseline wander droop, and is the zero point for the vertical axis. Point A, with MDI voltage VA, is earlier in time from B, with a magnitude that is 80 % of the MLT-3 upper envelope value. Point C, with MDI voltage VC, is between A and B, with a magnitude that is 20 % of the MLT-3 upper envelope value. The time between A and C is T.

These measurements are to be made for the transmitter pair and observing the differential signal output at the MDI with intervening cable less than 1 m long. The time constant of the transmitter MDI connected to the test fixture of figure ??? is given by:

[place figure 25-1 formula and equation number here. Remove formula from Figure 25-1]

Also integrated with 122, 123, 220, 214, decisions.

Cl 25 SC 25.4.4a.1 P19 L30 # 219  
 Law, David 3Com

Comment Type E Comment Status A EZ

Suggest the MDI should be marked in Figure 25-1.

SuggestedRemedy

Mark the boxes with a cross in them with a vertical dotted line that is annotated MDI.

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE 30, and add MDI.

Cl 25 SC 25.4.4a.1 P19 L26 # 220  
 Law, David 3Com

Comment Type T Comment Status A TEZ

If a cable is to be allowed we should specify what cable it is, can it be any piece of cable or does it have to be Cat 5 or better. Suspect it is the latter so specify the cable has to meet or exceed subclause 25.4.7 'UTP cable plant'.

SuggestedRemedy

Change '.. cable less than ..' to read '.. cable, meeting or exceeding the requirements of 25.4.7, less than ..'.

Response Response Status C

ACCEPT.

Cl 33 SC 33.4.9.2.1 P91 L36 # 221  
 Law, David 3Com

Comment Type T Comment Status A

Rather than calling out 'CAT5', we should really reference 11801, alternatively suggest that it would be simpler to reference the 100BASE-T cabling specification found in subclause 25.4.7 'UTP cable plant' - after all - it is this channel we are trying to replicate.

SuggestedRemedy

Suggest that '.. a 0.5 m maximum length of CAT5 cable, terminated ..' should be changed to read '.. a 0.5 m maximum length of cable, meeting the requirements of 25.4.7, terminated ..'.

Response Response Status C

ACCEPT.



IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.6.6.6 P106 L27 # 222  
 Law, David 3Com

Comment Type T Comment Status R

The two states 'PD POWER REALLOCATION' and 'PD POWER REQUEST' perform the same action, that is assign 'PDRequestedPowerValue' the value 'PD\_New\_Value'. Since the transition between the two states is a UCT the state 'PD POWER REALLOCATION' is redundant

SuggestedRemedy

Delete the state 'PD POWER REALLOCATION', change the transition from 'PD POWER REVIEW' to 'PD POWER REQUEST' to read ((PD\_New\_Value > PDMaxPowerValue) \* (PD\_New\_Value > TempVar)) + (PD\_New\_Value <= PDMaxPowerValue) + (PD\_New\_Value <= TempVar).

Response Response Status C

REJECT.

Commentor admits this comment was incorrect in comment 252

Cl 33 SC 33.6.6.5 P104 L6 # 223  
 Law, David 3Com

Comment Type T Comment Status A

In the case of the examine\_request function it is stated that PSE\_New\_Value is 'The new max power value that the PSE expects the PD to draw.' This is only true in the cases where change\_accept is TRUE, when FALSE there request has been rejected and there will not be a new max power value. Further it is stated that when change\_accept is TRUE 'The requested change to the allocated power is accepted', well if that is the case then PSE\_New\_Value should be set to equal the value that the PD has requested, if it can be set to another value the request hasn't really been accepted.

SuggestedRemedy

If the PSE can only accept or reject the requested new power, as the definition for the variable change\_accept seems to state, the variable PSE\_New\_value should read 'Set to MirroredPDRequestedPowerValue when change\_accept is set TRUE', if it can be set to any value regardless of what the PD requested the variable PSE\_New\_value should read 'The new max power value that the PSE expects the PD to draw when change\_accept is set TRUE'.

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE 121

Cl 33 SC 33.6.7 P106 L48 # 224  
 Law, David 3Com

Comment Type T Comment Status A

This text states that 'The PSE responds to a PD's request through the aDLLPSEAllocatedPowerValue (30.9.1.1.20) attribute in the PSE object class.'. Now it may depend on what is considered a response but the PSE copies the request to the 'echo' value, the aDLLPDRRequestedPowerValueEcho (30.9.1.1.19) attribute when the PSE power control state diagram MIRROR UPDATE state. It will only change the aDLLPSEAllocatedPowerValue (30.9.1.1.20) attribute if the change requested by the PD is accepted - which can change at any other time if the PSE chooses to change the allocated value for internal reasons.

SuggestedRemedy

Suggest changing:

'The PSE responds to a PD's request through the aDLLPSEAllocatedPowerValue (30.9.1.1.20) attribute in the PSE object class. The PSE also copies the value of the aMirroredDLLPDRRequestedPowerValue (30.9.1.1.18) attribute in the PSE object class to the aDLLPDRRequestedPowerValueEcho (30.9.1.1.19) attribute in the PSE object class.' to read

'The PSE responds to the PD's request by copying the value of the aMirroredDLLPDRRequestedPowerValue (30.9.1.1.18) attribute in the PSE object class to the aDLLPDRRequestedPowerValueEcho (30.9.1.1.19) attribute in the PSE object class. If the request is accepted the aDLLPSEAllocatedPowerValue (30.9.1.1.20) attribute in the PSE object class will be changed although it should be noted that this value can change at any time by the PSE to change the power allocated to the PD.'

Response Response Status C

ACCEPT.

Cl 33 SC 33.6.2.1 P98 L25 # 225  
 Law, David 3Com

Comment Type T Comment Status A

Should define what the reserved values are so that they can be used in the future if required - reserved bits are usually defined as 'Write as zero, ignore on read' hence this reserved bits should be 'Transmit as zero, ignore on receive'.

SuggestedRemedy

Change 'Reserved' to read 'Transmit as zero, ignore on receive' in the 'Value/meaning' column for bits 3:2 of Table 33-23.

Response Response Status C

ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.6.4 P100 L7 # 226  
 Law, David 3Com

Comment Type T Comment Status A

Why is the 'power priority' TLV variable marked as RESERVED in the mapping provided in Table 33-26, the aDLLPDPowerPriority attribute in the oPSE managed object class provides the PD priority assigned by the PSE and it would seem reasonable to communicate this to the PD since the PD is required to mirror this value back in the aMirroredDLLPowerPriority attribute.

SuggestedRemedy

Change 'RESERVED' to read 'aDLLPDPowerPriority'.

Response Response Status C

ACCEPT.

Cl 33 SC 33.6.4 P100 L11 # 227  
 Law, David 3Com

Comment Type TR Comment Status A

Table 33-26 is titled the 'DTE Power via MDI TLV to PSE object class cross-references' however it actually only provides the mapping from the Clause 30 PSE attributes to the TLV, not from the TLV to the Clause 30 PSE attributes.

SuggestedRemedy

[1] Change the title of Table 33-26 to read 'PSE object class to DTE Power via MDI TLV class cross-references' and reverse the order of the second and third columns so that the 'Clause 30 attribute' column is the second column and the 'TLV variable' is third.

[2] Add a new table titled 'DTE Power via MDI TLV to PSE object class cross-references', the is similar to the existing Table 33-26, the first column is the 'TLV name' column, the second is TLV variable and the third is 'Clause 30 attribute'. The content of these two columns are:

TLV variable Clause 30 attribute  
 power type aMirroredDLLPowerType  
 power source aMirroredDLLPowerSource  
 power priority aMirroredDLLPowerPriority  
 PD requested power value aMirroredDLLPDRrequestedPowerValue  
 PSE allocated power value aMirroredDLLPSEAllocatedPowerValueEcho

Response Response Status C

ACCEPT.

Cl 33 SC 33.6.4 P100 L23 # 228  
 Law, David 3Com

Comment Type TR Comment Status A

Table 33-26 is titled the 'DTE Power via MDI TLV to PD object class cross-references' however it actually only provides the mapping from the Clause 30 PD attributes to the TLV, not from the TLV to the Clause 30 PD attributes.

SuggestedRemedy

[1] Change the title of Table 33-27 to read 'PD object class to DTE Power via MDI TLV cross-references' and reverse the order of the second and third columns so that the 'Clause 30 attribute' column is the second column and the 'TLV variable' is the third.

[2] Add a new table titled 'DTE Power via MDI TLV to PD object class cross-references', the is similar to the existing Table 33-26, the first column is the 'TLV name' column, the second is TLV variable and the third is 'Clause 30 attribute'. The content of these two columns are:

TLV variable Clause 30 attribute  
 power type aMirroredDLLPowerType  
 power source aMirroredDLLPowerSource  
 power priority aMirroredDLLPowerPriority  
 PD requested power value aMirroredDLLPDRrequestedPowerValueEcho  
 PSE allocated power value aMirroredDLLPSEAllocatedPowerValue

Response Response Status C

ACCEPT.

Cl 33 SC 33.6.4 P100 L30 # 229  
 Law, David 3Com

Comment Type TR Comment Status A 161

It is optional for a Type 1 PSE to support Data Link Layer classification however that is no mentioned here nor in relation to pse\_dll\_ready.

SuggestedRemedy

Change the text 'A Type 1 PSE shall send ..' to read 'A Type 1 PSE that implements Data Link Layer classification shall send ..'.

Response Response Status C

ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

CI 33 SC 33.6.6.3 P102 L33 # 230  
 Law, David 3Com

Comment Type T Comment Status A

The local\_system\_change variable is defined as 'An implementation specific control variable that indicates that the local system wants to change the locRequestedPowerValue.' yet the variable locRequestedPowerValue is not mentioned anywhere else in the draft.  
 The variable local\_system\_change is used both in the PSE and PD state diagrams a desire in the local system to change the power allocation, in a PSE to change the allocation to the PD, in a PD to indicate that it wishes to request a new allocation for the PSE.

SuggestedRemedy

An implementation specific control variable that indicates that the local system wants to change the allocated power value. In a PSE this indicates it is going to change the power allocated to the PD. In a PD this indicates it is going to request a new power allocation from the PSE.  
 Values: FALSE: The local system does not wants to change the power allocation.  
 TRUE: The local system wants to change the power allocation.

Response Response Status C  
 ACCEPT.

CI 33 SC 33.6.6.3 P102 L53 # 231  
 Law, David 3Com

Comment Type T Comment Status A

We generally don't use the terminology 'system software' as it acceptable to implement the system in any way that meets the externally observable behavior required by the standard. In addition the values for this variable are not defined.

SuggestedRemedy

Change 'This variable is updated by the PD system software.' to read 'An implementation specific control variable that indicates that the PD has initialized Data Link Layer classification.'  
 Add the value definitions:  
 Values : FALSE: Data Link Layer classification has not complete initialization.  
 TRUE: Data Link Layer classification has completed initialization.

Response Response Status C  
 ACCEPT.

CI 33 SC 33.6.6.3 P103 L11 # 232  
 Law, David 3Com

Comment Type T Comment Status A

We generally don't use the terminology 'system software' as it acceptable to implement the system in any way that meets the externally observable behavior required by the standard. In addition the values for this variable are not defined.

SuggestedRemedy

Change 'This variable is updated by the PSE system software.' to read 'An implementation specific control variable that indicates that the PSE has initialized Data Link Layer classification.'  
 Add the value definitions:  
 Values : FALSE: Data Link Layer classification has not complete initialization.  
 TRUE: Data Link Layer classification has completed initialization.

Response Response Status C  
 ACCEPT.

CI 01 SC 1.4 P17 L47 # 233  
 Patoka, Martin Texas Instruments

Comment Type G Comment Status A

Definition of a type 2 PD seems weak

SuggestedRemedy

A PD that provides a Class 4 signature during Physical Layer classification, understands 2-event classification, and is capable of DLL classification. (See IEEE 802.3, Clause 33.)

Response Response Status C  
 ACCEPT.

CI 01 SC 1.4 P17 L50 # 234  
 Patoka, Martin Texas Instruments

Comment Type G Comment Status R

Definition of a type 2 PSE seems weak

SuggestedRemedy

A PSE that supports 2-event hardware classification or hardware 1-event classification and DLL classification, and can provide up to 36W. (See IEEE 802.3, Clause 33.)

Response Response Status C  
 REJECT.

No consensus to change the text, therefore the original text prevails.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.1.4.2 P38 L19 # 235  
 Patoka, Martin Texas Instruments  
 Comment Type **TR** Comment Status **A** TEZ  
 Clarify that the imbalance is intra-pair  
 SuggestedRemedy  
 Resistance unbalance is a measure of the difference between the two conductors of a twisted pair in the 100 Ohm balanced cabling system.  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.2 P38 L32 # 236  
 Patoka, Martin Texas Instruments  
 Comment Type **E** Comment Status **R**  
 The term endpoint is used in 33.1.3  
 SuggestedRemedy  
 The PSE is the portion of the endpoint or midspan  
 Response Response Status **C**  
 REJECT.  
 end station: A system attached to a LAN that is an initial source or a final destination of MAC frames transmitted across that LAN. A Network layer router is, from the perspective of the LAN, an end station; a MAC Bridge, in its role of forwarding MAC frames from one LAN to another, is not an end station.  
 (See IEEE 802.3, Clause 43.)  
 Endpoint by itself is not defined, only Endpoint PSE. End Station is the proper term as this is the initial definition of a PSE.

Cl 33 SC 33.2.4.6 P49 L14 # 237  
 Patoka, Martin Texas Instruments  
 Comment Type **TR** Comment Status **A** pics  
 do\_short\_detect function defined itself as an overload, looks to be a cut-n-paste from overload  
 SuggestedRemedy  
 This function detects a PSE short circuits condition as current above Ilimin for TLIM  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 OBE 39

Cl 33 SC 33.2.6 P53 L1 # 238  
 Patoka, Martin Texas Instruments  
 Comment Type **E** Comment Status **A** EZ  
 Sections 33.2.5 - 33.2.7.3 all seem to be a part of the detection requirements of 33.2.5  
 SuggestedRemedy  
 Number these sections as a part of the detection section, 33.2.5.x  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.2.6.1 P53 L53 # 239  
 Patoka, Martin Texas Instruments  
 Comment Type **TR** Comment Status **D** PSE  
 The settling tolerance of 1% in the note should be reduced to <0.3% for interoperability. The difference between PSE accept and PD accept is 0.76% on the high limit.  
 SuggestedRemedy  
 Change tolerance to 0.3%  
 Proposed Response Response Status **Z**  
 REJECT.  
 This comment was WITHDRAWN by the commenter.  
 See 44.  
 A system that has not reached its final value can still provide accurate results that have a tolerance based on the measurement accuracy (V, I, time).

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.7.1 P55 L7 # 240  
 Patoka, Martin Texas Instruments

Comment Type **TR** Comment Status **A** PSE

Rgood and Cgood are not defined

*SuggestedRemedy*  
 Add a note: "Rgood is calculated in the same manner as Rdetect in equation 33-7, and Cgood is extracted from the port R - C charge characteristics."

*Response* Response Status **C**  
 ACCEPT IN PRINCIPLE.

Formula 33-7 is defined at the PD.

On page 53, line 51, add:  
 Resistance in 33.2.6.1 is calculated from two voltage/current measurements made during the detection process.

$R = (V2 - V1)/(I2 - I1)$  (33-?)  
 where  
 V1 and V2 are the first and second voltage measurements made at the PSE PI, respectively  
 I1 and I2 are the first and second current measurements made at the PSE PI, respectively  
 R is the effective resistance. Note that attached PI capacitance may be determined using these measurements and the port R - C charge characteristics.

See 243.

Cl 33 SC 33.2.7.1 P55 L3 # 241  
 Patoka, Martin Texas Instruments

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

Vos and los are not defined

*SuggestedRemedy*  
 Remove these terms

*Proposed Response* Response Status **Z**  
 REJECT.

This comment was WITHDRAWN by the commenter.

Related to 242.

Cl 33 SC 33.2.6.1 P54 L33 # 242  
 Patoka, Martin Texas Instruments

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

Table 33-5. Vos and los are not defined, while Vos is only useful for PSE design. los is meaningless. Since they have been undefined since 2005, they are not necessary.

*SuggestedRemedy*  
 Move Vos to Table 33-4, add comment "PSE must accommodate a PD with rectifier offset to Vosmax.", Delete los from Table 33-5.

*Proposed Response* Response Status **Z**  
 REJECT.

This comment was WITHDRAWN by the commenter.

Reviewed without consensus. Jeff and Yair to talk offline.

Vos, and los have caused too much discussion and provide little benefit. The specification will be easier to understand if these terms are eliminated. Interoperability is maintained because a PSE shall provide Vvalid when driving a PD, and a PD provides Rvalid when driven with this voltage range. This works because the PSE provides more than Vos and supplies enough current to drive Rvalid, and the PD provides Rvalid and takes into account its bias requirements for the operating voltage range.

Rdetect is a dynamic resistance. Some PSE detection circuits use a current source. This requires a PD to provide a valid signature at a reasonable current. The minimum value could be interpreted to be the PSE los of 12 uA. I believe a value of 50 uA would work with all devices I am aware of and this provides more PD design margin.

Delete all references to PSE and PD Vos and los.  
 Remove Figure 33-19 and references to it.  
 Add parameter Ivalid to Table 33-14 with the same conditions as that table Rdetect. The minimum current is 12 uA.  
 Add a sentence to page 73, line 35, "Rdetect shall result when at least Ivalid current is sunk by the PD PI."

The Editor should use their discretion to cleanup text.

Instruct the editor to adjust the PICs to match these changes.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.5 P52 L43 # 243  
 Patoka, Martin Texas Instruments

Comment Type E Comment Status A pics

The PSE measures the link segment (per 33.2.7.1), however the text states is is measuring the PD.

SuggestedRemedy

Add a sentence similar to "The PSE PI is connected to a PD through a link segment, however in the following sections, the link is not called out to preserve clarity."

Response Response Status C

ACCEPT IN PRINCIPLE.

Add sentences after line 44, "The PSE PI is connected to a PD through a link segment. In the following sections the link is not called out to preserve clarity."

---- Additional input from the commentor ----

The PSE is connected to a link section, which may or not have a terminating PD. P55L3 says this.

However, P52L43 states that the PSE is powering a PD - yes but when connected through a link segment.

This follows through the next paragraph. Also at P53L4.

My suggestion was to introduce the concept that the PSE sees maybe a cable & maybe a PD, but the PD always through a cable.

Then when the rest of sections refer only to PD, it will be implicitly stated that it is through the link segment.

---- end

Cl 33 SC 33.2.9.2 P61 L49 # 244  
 Patoka, Martin Texas Instruments

Comment Type TR Comment Status A pics

Imin2 definition is unclear, it appears in 6 locations.

SuggestedRemedy

It might be that this s/b Imin per Table 33-11 item 18, however it must be clarified.

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE 149.

Cl 33 SC 33.2.9.6 P62 L44 # 245  
 Patoka, Martin Texas Instruments

Comment Type TR Comment Status A pics

item a) is somewhat contradicted (in current required) by items c) - e)

SuggestedRemedy

Change a) to "During POWER\_UP, the Inrush requirement applies for duration TInrush."

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE 57.

Cl 33 SC 33.2.9.8 P65 L16 # 246  
 Patoka, Martin Texas Instruments

Comment Type ER Comment Status D PSE

Tiimmin does not agree with T33-11

SuggestedRemedy

TOVLDmin

Proposed Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

TLIM is not equal to TOVLD for Type 2 PSEs.

What is the concern here?

Cl 33 SC 33.3.1 P69 L42 # 247  
 Patoka, Martin Texas Instruments

Comment Type TR Comment Status R

Information in the note is critical to maintain interoperability with the PSE devices specified.

SuggestedRemedy

Remove the text "Note-" making it clear this is a requirement. Although the text is clear in this, the "Note" might be confusing.

Response Response Status U

REJECT.

Discussed and could not come to consensus. Default action is to reject.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.7.2 P55 L16 # 248  
 Patoka, Martin Texas Instruments  
 Comment Type **TR** Comment Status **A** PSE  
 Rbad and Cbad are not defined  
*SuggestedRemedy*  
 Add a note: "Rbad is calculated in the same manner as Rdetect in equation 33-7, and Cbad is extracted from the port R - C charge characteristics."  
*Response* Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 OBE 240

Cl 33 SC 33.3.4 P74 L12 # 249  
 Patoka, Martin Texas Instruments  
 Comment Type **TR** Comment Status **A** *ioffset*  
 Definition of Ioffset is unusable since the "corner" of the V-I slope is soft, and some current can be theoretically and practically expected all the way to 0V.  
*SuggestedRemedy*  
 Show Voffset as the projected line intercept and delete Ioffset  
*Response* Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 OBE 250

Cl 33 SC 33.3.4 P73 L51 # 250  
 Patoka, Martin Texas Instruments  
 Comment Type **TR** Comment Status **A** *ioffset*  
 Table 33-14: I offset is not measurable, has not been defined since 2003, and is unnecessary since the PD may not source current.  
*SuggestedRemedy*  
 Delete Ioffset requirement.  
*Response* Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 Edit Table 33-14 as follows:  
 1) Change Parameter "Ioffset" to "Voltage at the PI", Minimum = 2.7V, Condition: is "Iport = 124uA"  
 2) Revert Figure 33-19 to 802.3af figure 33C.20 (also found in 802.3-2008). Change Y and X axis of 33C.20 to IPD, VPD  
 see "Section 33\_3\_5\_2a.doc" for further clarification.

Cl 33 SC 33.3.7.1 P77 L48 # 251  
 Patoka, Martin Texas Instruments  
 Comment Type **T** Comment Status **A** *PD Startup*  
 Startup may not occur until Von, so application of Vport\_PD min is a contradiction.  
*SuggestedRemedy*  
 Startup begins upon application of Vport above Von, and subsequently VPort\_PD as defined in Table 33--18  
*Response* Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 Replace lines 47-50 p. 77 with the following text:  
 33.3.7.1 Input Voltage  
 The specification for VPort\_PD in Table 33--18 is for the input voltage range after startup (see 33.3.7.3), and accounts for loss in the cabling plant.  
 Note, VPort\_PD = VPSE – (RChan x IPort).

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.6.6.6 P106 L27 # 252  
 Law, David 3Com

Comment Type T Comment Status A 121

My comment that the two states 'PD POWER REALLOCATION' and 'PD POWER REQUEST' can be combined was incorrect and I withdraw it - unfortunately the myBallot system is write only so I cannot delete the comment now I have submitted it. The comment should have read as follows:  
 Since the transition between the states 'PD POWER REQUEST' and 'MIRROR UPDATE' is UCT the state 'PD POWER REQUEST' is redundant and the action in that state can be moved to 'MIRROR UPDATE' state.

*SuggestedRemedy*

Delete the 'PD POWER REQUEST' state and add the assignment 'PDRrequestedPowerValue <= PD\_New\_Value' to the 'MIRROR UPDATE' state.

Response Response Status C

ACCEPT.

Cl 33 SC 33.2.4.7 P52 L13 # 253  
 Law, David 3Com

Comment Type TR Comment Status A pics

The Overload state diagram is held in the IDLE\_OVLD state when power is not applied (power\_applied = false), the moment power is applied (power\_applied = true) it transition to the MONITOR\_OVLD state when the do\_overload\_detect function is called once - see 21.5.1 'Actions inside state blocks' which states 'After performing all the actions listed in a state block one time, the state block then continuously evaluates its exit conditions until one is satisfied, at which point control passes through a transition arrow to the next block. While the state awaits fulfilment of one of its exit conditions, the actions inside do not implicitly repeat.'

So the do\_overload\_detect function is called once after power\_applied becomes true then never again - hence should an overload occur some time after power\_applied becomes true it will not be detected - this doesn't appear to be the intended behaviour. The same is also true for the Short state diagram.

The simplest fix, assuming the timers that these two state diagrams used to provide are no longer required, is to define ovl\_d\_detected and short\_detected as variables and delete the two state diagrams.

*SuggestedRemedy*

- [1] Delete the Overload and Short state diagrams.
- [2] Delete the do\_overload\_detect and do\_short\_detect functions
- [3] Define ovl\_d\_detected and short\_detected as variables

ovld\_detected:

A variable indicating if the PSE output current has been in an overload condition (see 33.2.9.7) for at least Tovld of a one second sliding time.

Values: TRUE: The PSE has detected an overload condition.

FALSE: The PSE has not detected a qualified overload condition.

short\_detected:

A variable indicating if the PSE output current is in a short circuit condition (see 33.2.9.8).

Values: TRUE: The PSE has detected a current limit condition.

FALSE: The PSE has not detected a qualified current limit condition.

Response Response Status C

ACCEPT IN PRINCIPLE.

This removes two simple state diagrams and provides the intended functionality.

- [1] Delete the Overload and Short state diagrams.
- [2] Delete the do\_overload\_detect and do\_short\_detect functions
- [3] Define ovl\_d\_detected and short\_detected as variables

ovld\_detected:

A variable indicating if the PSE output current has been in an overload condition (see 33.2.9.7) for at least Tovld of a one second sliding time.

Values: TRUE: The PSE has detected an overload condition.

FALSE: The PSE has not detected a qualified overload condition.



IEEE P802.3at D4.0 PoEplus comments

short\_detected:

A variable indicating if the PSE output current is in a short circuit condition for TLIM within a sliding window (see 33.2.9.8).

Values: TRUE: The PSE has detected a current limit condition.

FALSE: The PSE has not detected a qualified current limit condition.

Cl 30 SC 30.2.5 P26 L26 # 254  
Law, David 3Com

Comment Type T Comment Status A

The package that aPDReducedOperationPowerValue is in is not marked.

SuggestedRemedy

Add an 'X' in the PD Basic Package (mandatory) column for the attribute aPDReducedOperationPowerValue.

Response Response Status C  
ACCEPT.

Cl 30 SC 30.9.1.1.12 P26 L48 # 255  
Law, David 3Com

Comment Type T Comment Status A

Both the oPSE and oPD managed object classes contain attributes named aDLLPowerType and aMirroredDLLPowerType which I don't think is allowed.

SuggestedRemedy

Either delete these attributes - they seem redundant as the Type will always be PSE for the oPSE managed object class and PD for the oPD managed object class, or name them so they are unique.

Response Response Status C  
ACCEPT IN PRINCIPLE.

On P26, L50 replace "The second bit indicates PSE or PD." with "The second bit shall indicate PSE"  
on P30, L27 replace "The second bit indicates PSE or PD." with "The second bit shall indicate PD"

update PICS accordingly.

Cl 30 SC 30.9.1.1.22 P29 L11 # 256  
Law, David 3Com

Comment Type T Comment Status A

This attributes states it '.. returns the response time of the local system ..' however does not specify the units used.

SuggestedRemedy

Specify the time units used for this attribute.

Response Response Status C  
ACCEPT IN PRINCIPLE.

Use seconds

Cl 33 SC 33.6.2 P97 L22 # 257  
Law, David 3Com

Comment Type TR Comment Status A

Now that IEEE P802.3bc is in sponsor ballot, and the IEEE P802.3at PAR has been changed to make IEEE P802.3at approval contingent on IEEE P802.3bc, the changes found in this subclause should be re-written to be a set of changes to the new Clause 79.

SuggestedRemedy

Provide a set of changes for Clause 79.

Response Response Status C  
ACCEPT IN PRINCIPLE.

Editor given editorial license to make changes requested.

-----  
P802.3bc is currently in working group ballot, however, the commenter is correct that this section will become editorial instructions for an existing clause, which will be C79.

The Editor-in-Chief for 802.3at and the Editor-in-Chief for 802.3bc are encouraged to produce a set of editorial instructions that can be presented to the P802.3at TF for consideration when discussing this comment.

IEEE P802.3at D4.0 PoEplus comments

Cl 30 SC 30.2.3 P22 L3 # 258  
 Law, David 3Com

Comment Type TR Comment Status A mgmt

IEEE P802.3bc defines a entirely relationship diagram for LLDP objects that is separate from the DTE and Repeater system entity relationship diagrams currently found in IEEE 802.3. Further, rather than defining a new TLV, IEEE P802.3at is extending the existing Power via MDI TLV so should extent the current MIB defined for that TLV.

SuggestedRemedy

Separate out the LLDP related attributes from the oPSE and oPD managed objects and move them to a modification to the IEEE P802.3bc defined oLldpXdot3LocSystemsGroup and oLldpXdot3RemSystemsGroup managed objects.

Response Response Status W

ACCEPT IN PRINCIPLE.

Move the entire current PD attributes to be the PD LLDP objects. Move the entire current LLDP related PSE attributes to be the PSE LLDP objects. Make other related editorial changes to coordinate with IEEE P802.3bc D2.0.

Cl 33 SC 33.8.3.1 P113 L12 # 259  
 Nadeau, Gerard

Comment Type G Comment Status A TEZ

Update PICS COM2 from 'shall' statement in 33.1.4.1, page 38, line 4: '...DC loop resistance shall be 25 ohms or less.'

SuggestedRemedy

Update PICS COM2 'Value/Comment' to reflect updated text in 33.1.4.1 New text: 'DC loop resistance 25 ohms or less. Requirement satisfied by category 5e components (cables, cords, and connectors)'

Response Response Status C

ACCEPT.

Cl 33 SC 33.8.3.1 P113 L12 # 260  
 Nadeau, Gerard

Comment Type G Comment Status A TEZ

Missing PICS statement. Necessary due to the addition of clause 33.1.4.2 and the text '...resistance unbalance shall be 3 % or less.' Page 38, line 18.

SuggestedRemedy

Add PICS Item Feature Subclause Value/Comment Status Support COM3 Resistance unbalance 33.1.4.2 3% or less M Yes[]

Response Response Status C

ACCEPT.

This used to be PSEES2, which was dropped in D3.2.

Cl 33 SC 33.8.3.2 P113 L44 # 261  
 Nadeau, Gerard

Comment Type G Comment Status A

Missing PICS statement. Necessary due to the addition of clause 33.2.4.6 and the text 'A Type 2 PSE shall assign a value of '2...' Page 49, line 34.

SuggestedRemedy

Insert PICS and renumber accordingly Item Feature Subclause Value/Comment Status Support PSE10 Mutual identification 33.2.4.6 Assign a value 2 M Yes[] complete: set\_parameter\_type

Response Response Status C

ACCEPT IN PRINCIPLE.

Insert new PICS in 33.8.3.2 and renumber as appropriate:

PSE#; Mutual identification complete; 33.2.4.6; Assign a value to set\_parameter\_type; M; Yes[ ]

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.8.3.2 P113 L46 # 262  
Nadeau, Gerard

Comment Type **G** Comment Status **A**

Missing PICS statement. Necessary due to the addition of clause 33.2.4.6 and the text  
'..the PSE shall meet the PI electrical requirements...' Page 49, line 37.

*SuggestedRemedy*

Insert PICS and renumber accordingly Item Feature Subclause Value/Comment Status  
Support PSE11 Type 2 PSE PI electrical 33.2.4.6 Meet Type 1 PSE PSET2:M Yes[]  
requirements when powering requirements or N/A[] Type 1 PD Type 2 PSE for lport\_max,  
ILIM, TLIM and PType

Response Response Status **C**

ACCEPT IN PRINCIPLE.

Insert new PICS in 33.8.3.2 and renumber as appropriate:

PSE#; Type 2 PSE PI electrical requirements; 33.2.4.6; Meet Type 1 PSE requirements  
when powering Type 1 PD or Type 2 PSE requirements for lPort\_max, ILIM, TLIM, and  
PType; PSET2:M; Yes[ ] N/A[ ]

Cl 33 SC 33.8.3.2 P113 L50 # 263  
Nadeau, Gerard

Comment Type **G** Comment Status **A**

Missing PICS statement. Necessary due to the additional text '..The PSE shall present a  
non-valid PD detection signature...' Page 53, line 3.

*SuggestedRemedy*

Insert PICS and renumber accordingly Item Feature Subclause Value/Comment Status  
Support PSE\_X Non-Valid Detection 33.2.6 As defined in Table M Yes[] signature 33-15  
when probed by another PSE.

Response Response Status **C**

ACCEPT IN PRINCIPLE.

Insert new PICS and renumber as appropriate:

PSE#; Non-valid detection signature; 33.2.6; As defined in Table 33-15 when probed by  
another PSE; M; Yes[ ]

Cl 33 SC 33.8.3.2 P114 L7 # 264  
Nadeau, Gerard

Comment Type **G** Comment Status **A**

The text on page 42 line 43 in 33.2.6 has been deleted from draft 3.0. 'The PSE shall  
exhibit Thevenin equivalence to one of the detection circuits shown in Figure 33-12 or  
Figure 33-13 in all detection states.' Therefore PICS PSE17 is now invalid.

*SuggestedRemedy*

Delete PICS statement PSE17 and renumber.

Response Response Status **C**

ACCEPT.

Cl 33 SC 33.8.3.2 P114 L32 # 265  
Nadeau, Gerard

Comment Type **G** Comment Status **A** EZ

Value/Comment Field: missing the '1' for 'Type 1 PSE'.

*SuggestedRemedy*

Add the '1'

Response Response Status **C**

ACCEPT.

Cl 33 SC 33.2.8 P56 L49 # 266  
Nadeau, Gerard

Comment Type **G** Comment Status **A**

Missing 'shall'. Text has been changed from draft 3.0 D3.0 text: Subsequent to successful  
detection, all Type 2 PSEs shall perform classification. D3.3 text: Subsequent to successful  
detection, all Type 2 PSEs perform classification using at least one of the following:

*SuggestedRemedy*

Insert 'shall' ...all Type 2 PSEs shall perform classification using... If 'shall' is not inserted  
delete PICS PSE26 and renumber.

Response Response Status **C**

ACCEPT IN PRINCIPLE.

The behavior is captured in the Table 33-8 and in shalls in other spots (for example: P56,  
L42).

delete PICS PSE26 and renumber

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.8.3.2 P114 L37 # 267  
 Nadeau, Gerard  
 Comment Type **G** Comment Status **A** TEZ  
 Text in 33.2.8, page 57, line 27 has changed from draft 3.0 therefore PICS PSE27 needs to be updated.  
 SuggestedRemedy  
 Update Value/Comment field in PSE27 to: 'Return to IDLE state or assign to Class 0.'  
 Update Subclause reference in PICS PSE27 to 33.2.8 (drop .1)  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.8.3.2 P114 L39 # 268  
 Nadeau, Gerard  
 Comment Type **G** Comment Status **A**  
 Insert PICS after current PSE27. Text in 33.2.8, page 57, line 27 has changed from draft 3.0 therefore another PICS needs to added after the current 'Default classification' feature.  
 SuggestedRemedy  
 Insert PICS (after current PSE27, default classification for Type 1 PSEs) and renumber accordingly Item Feature Subclause Value/Comment Status Support PSE\_X Default classification 33.2.8 Return to IDLE state PSET2:M Yes[] N/A[]  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 Insert new PICS after PSE27 and renumber as appropriate:  
 PSE#; Default classification; 33.2.8; Return to IDLE state; PSET2:M; Yes[] N/A[]

Cl 33 SC 33.8.3.2 P115 L6 # 269  
 Nadeau, Gerard  
 Comment Type **G** Comment Status **A**  
 Text in 33.2.8.1, page 57, line 46 has changed from D3.0. A shall has been removed. D.3.0 Text: a Type 2 PSE shall assume it is powering a Type 2 PD. D 3.1 Text: a Type 2 PSE treats the PD as a Type 2 PD but may provide Class 0 power until mutual identification is complete.  
 SuggestedRemedy  
 Delete PICS PSE34 or Update the text in 33.2.8.1 to say 'a Type 2 PSE shall treat the PD...' and leave the current PICS PSE34 in the draft.  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 Delete PSE34

Cl 33 SC 33.8.3.2 P115 L10 # 270  
 Nadeau, Gerard  
 Comment Type **G** Comment Status **A** TEZ  
 Text in 33.2.8.1, page 57, line 48 has changed from D3.0. PICS PSE35 needs updating.  
 SuggestedRemedy  
 Update Value/Comment field in PSE35 to: Return to IDLE state or assign PD to Class 0 if Iclass is greater than or equal to IClass\_LIM.  
 Response Response Status **C**  
 ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.8.3.2 P115 L12 # 271  
Nadeau, Gerard

Comment Type **G** Comment Status **A**

Text in 33.2.8.1, page 57, line 48 has changed from D3.0. A PICS needs to be added after the current PSE35.

*SuggestedRemedy*

Insert PICS (after current PSE35) and renumber accordingly Item Feature Subclause Value/Comment Status Support PSE\_X Classification default 33.2.8.1 Return to IDLE state PSET2:M Yes[] for 1-Event Physical Layer N/A[] classification

Response Response Status **C**

ACCEPT IN PRINCIPLE.

Insert new PICS after PSE35 and renumber as appropriate:

PSE#; Classification default for 1-Event Physical Layer classification; 33.2.8.1; Return to IDLE state; PSET2:M; Yes[ ] N/A[ ]

Cl 33 SC 33.8.3.2 P115 L37 # 272  
Nadeau, Gerard

Comment Type **G** Comment Status **A** TEZ

Text in 33.2.8.2, page 58, line 30, has changed from draft 3.0. PICS PSE46 needs updating.

*SuggestedRemedy*

Change Value/Comment field in PICS PSD46 to the following: 'Return to IDLE state if IClass is greater than or equal to IClass\_LIM.'

Response Response Status **C**

ACCEPT.

Cl 33 SC 33.8.3.2 P115 L51 # 273  
Nadeau, Gerard

Comment Type **G** Comment Status **A**

Text in 33.2.8.2, page 58, line37, has been changed from D3.0, need to add a PICS as a result of this text. ' it shall maintain the PI voltage at VReset for a period of at least TReset min before starting a new detection cycle.'

*SuggestedRemedy*

Insert PICS (after current PSE51) and renumber accordingly Item Feature Subclause Value/Comment Status Support PSE\_X Return to IDLE State 33.2.8.2 Vreset for a period 2EPLC:M Yes[] PI Voltage of at least TReset N/A[]

Response Response Status **C**

ACCEPT IN PRINCIPLE.

Insert new PICS after PSE51 and renumber as appropriate:

PSE#; Return to IDLE state PI voltage; 33.2.8.2; Vreset for a period of at least TReset; 2EPLC:M; Yes[ ] N/A[ ]

Cl 33 SC 33.8.3.2 P116 L4 # 274  
Nadeau, Gerard

Comment Type **G** Comment Status **A**

Text has changed from D3.0 to D3.3 in 33.2.9, page 60, line3. Text struck from D3.0 'When a Type 2 PSE powers a Type 1 PD, the PSE shall meet the electrical requirements...' As a result PICS PSE53 is not needed.

*SuggestedRemedy*

Delete PICS PSE53 and renumber accordingly

Response Response Status **C**

ACCEPT.

Text related to this behavior has been moved to 33.2.4.6 (See 262).

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.8.3.2 P116 L10 # 275  
 Nadeau, Gerard  
 Comment Type **G** Comment Status **A**  
 Text has changed from D3.0 to D3.3 in 33.2.9.1, page 61, line 41. The text struck from D3.0 'The voltage potential shall be measured between any conductor...' As a result PICS PSE55 is not needed.  
 SuggestedRemedy  
 Delete PICS PSE55 and renumber accordingly  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.8.3.2 P116 L30 # 276  
 Nadeau, Gerard  
 Comment Type **G** Comment Status **A** TEZ  
 Text in 33.2.9.5, page 62, line 19, has been deleted from draft 3.0. Deleted text from Draft 3.0: 'the minimum value for IPort\_max in Table 33-9 shall be (PPort / VPort).' PICS PSE61 is no longer valid.  
 SuggestedRemedy  
 Delete PICS PSE61  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.8.3.2 P116 L33 # 277  
 Nadeau, Gerard  
 Comment Type **G** Comment Status **A** EZ  
 Equation number in 33.2.9.5, page 62, line 25 has changed from draft 3.0.  
 SuggestedRemedy  
 Change equation number in the Value/Comment field for PICS PSE62 to 33-3.  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.8.3.2 P116 L40 # 278  
 Nadeau, Gerard  
 Comment Type **G** Comment Status **A** EZ  
 Equation number has changed to 33-5 for IPSEUT in 33.2.9.8  
 SuggestedRemedy  
 Update equation number in PICS PSE64 to 33-5.  
 Response Response Status **C**  
 ACCEPT.  
 Editor to research why these references did not auto-update.

Cl 33 SC 33.8.3.2 P116 L40 # 279  
 Nadeau, Gerard  
 Comment Type **G** Comment Status **A** EZ  
 Figure number has changed in the text, 33.2.9.8, page 64, figure 33-15. PICS PSE64 requires an update  
 SuggestedRemedy  
 Change figure number in PICS PSE64 to 33-15.  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.8.3.2 P116 L54 # 280  
 Nadeau, Gerard  
 Comment Type **G** Comment Status **A** TEZ  
 New PICS required due to the new text in 33.2.9.12, page 65, line 54. 'Type 2 Endpoint PSEs shall meet the requirements of 25.4.4a in the presence of (lunb / 2).'  
 SuggestedRemedy  
 Insert PICS (after current PSE69) and renumber accordingly Item Feature Subclause Value/Comment Status Support PSE\_X Current unbalance for 33.2.9.12 Meet requirements of PSET2:M Yes[] type 2 PSE 25.4.4a in presence N/A[] of (lunb/2).  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 Insert new PICS after PSE69 and renumber as appropriate:  
 PSE#; Current unbalance for Type 2 Endpoint PSE; 33.2.9.12; Meet requirements of 25.4.4a in presence of (lunb/2); PSET2:M; Yes[ ] N/A[ ]

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.8.3.2 P117 L3 # 281  
 Nadeau, Gerard  
 Comment Type G Comment Status A TEZ  
 TOff in Value/Comment field in PICS PSE70 is incorrect, it should be Tpon. See text in 33.2.9.13, page 66, line 3.  
 SuggestedRemedy  
 Change TOff to Tpon.  
 Response Response Status C  
 ACCEPT.

Cl 33 SC 33.8.3.2 P117 L17 # 282  
 Nadeau, Gerard  
 Comment Type G Comment Status R  
 Insert PICS after PSE72 Text in 33.2.11.1, page 66, line 40 added since last PICS review. 'The PSE shall monitor either the DC MPS component, the AC MPS component, or both.'  
 SuggestedRemedy  
 Insert PICS (after current PSE72) and renumber accordingly Item Feature Subclause Value/Comment Status Support PSE\_X MPS monitoring 33.2.11.1 DC MPS or AC MPS M Yes[] requirement components or both  
 Response Response Status C  
 REJECT.  
 This behavior is captured by PSE major capability PICS "DC" and "AC" on page 112.

Cl 33 SC 33.8.3.2 P117 L24 # 283  
 Nadeau, Gerard  
 Comment Type G Comment Status A TEZ  
 Line 24 and Line 26. The terms IMin2 and IMin1 are used throughout the text however only IMin is defined in Table 33-11. I beleive these are editorial errors.  
 SuggestedRemedy  
 Search doucment and replace all instances if IMin1 and IMin2 with Imin.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 This has probably been covered by other comments submitted by this comment editor. But it's worth double- and triple-checking.  
 Editor to also adjust context as appropriate when replacing IMin1 or IMin2 with IMin.

Cl 33 SC 33.8.3.2 P117 L24 # 284  
 Nadeau, Gerard  
 Comment Type G Comment Status A TEZ  
 Text in 33.2.11.1.2, page 67, line 6 has changed from D3.0, PICS PSE77 requires updating.  
 SuggestedRemedy  
 Replace Value/Comment field with the following: 'IPort is greater than or equal to IMin max for a minimum of TMPS as specified in Table 33-11.'  
 Response Response Status C  
 ACCEPT.

Cl 33 SC 33.8.3.2 P117 L26 # 285  
 Nadeau, Gerard  
 Comment Type G Comment Status A TEZ  
 Text in 33.2.11.1.2, page 67, line 7 has changed from D3.0, PICS PSE78 requires updating.  
 SuggestedRemedy  
 Replace Value/Comment field with the following: 'IPort is less than or equal to IMin min as specified in Table 33-11.'  
 Response Response Status C  
 ACCEPT.

Cl 33 SC 33.8.3.2 P118 L20 # 286  
 Nadeau, Gerard  
 Comment Type G Comment Status A TEZ  
 Need to insert a PICS for current unbalance requirements for PD due to the new text in 33.3.2, page 70, line 10. 'Type 2 PDs shall meet the requirements of 25.4.4a in the presence of (lunb / 2).'

SuggestedRemedy  
 Insert PICS (after current PSE69) and renumber accordingly Item Feature Subclause Value/Comment Status Support PSE\_X Current unbalance for 33.3.2 Meet requirements of PDT2:M Yes[] type 2 PD 25.4.4a in presence N/A[] of (lunb/2).

Response Response Status C  
 ACCEPT IN PRINCIPLE.

Insert new PICS after PD6 and renumber as appropriate:

PD#; Current unbalance for Type 2 PD; 33.3.2; Meet requirements of 25.4.4a in presence of (lunb/2); PDT2:M; Yes[ ] N/A[ ]

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.8.3.2 P118 L26 # 287  
 Nadeau, Gerard  
 Comment Type **G** Comment Status **A**  
 PICS PD8 can be deleted. The text from D3.0, 33.3.4 has changed and the following text was deleted making PD8 no longer valid. '...while it is in a state where it will not accept power via the PI.'  
 SuggestedRemedy  
 Delete PICS PD8.  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.8.3.2 P119 L12 # 290  
 Nadeau, Gerard  
 Comment Type **G** Comment Status **A**  
 Text in 33.3.5.2.1 has changed, need to update PICS PD20 to reflect the change in text.  
 SuggestedRemedy  
 Replace PICS PD20 fields as follows: Feature: Mark event current and 2-Event class signature Value/Comment: Draw IMark (defined in Table 33-17) and present a non-valid detection signature (defined in Table 33-15).  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.8.3.2 P118 L41 # 288  
 Nadeau, Gerard  
 Comment Type **G** Comment Status **A**  
 PICS PD13 'shall' removed from text, 33.3.5, page 74, line 44. Either the word 'shall' is reinserted into the text or remove the PICS statement.  
 SuggestedRemedy  
 Insert the word 'shall' in 33.3.5, page 74, line 44. 'Type 2 PDs shall implement both...'  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 The shall was removed from the text because it is redundant to the requirement expressed by PICS PD12. There is only one acceptable permutation for a Type 2 PD: one which implements both 2-Event class signature and Data Link Layer classification.  
 Delete PD13.

Cl 33 SC 33.8.3.2 P119 L19 # 291  
 Nadeau, Gerard  
 Comment Type **G** Comment Status **A** TEZ  
 The text supporting PICS PD22 has been removed since D3.0 and clauses renumbered. Text in D3.0, 33.3.5.2.2, page 65, line 3: 'A PD implementing 2-Event class signature shall reset its pse\_power\_type state variable to 1 when the voltage at the PI is less than or equal to VReset max as defined in Table 33-16.'  
 SuggestedRemedy  
 Delete PICS PD20 and renumber.  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 This behavior is captured in the state diagram, which itself is covered by PICS PD6.  
 Delete PICS PD22.

Cl 33 SC 33.8.3.2 P119 L7 # 289  
 Nadeau, Gerard  
 Comment Type **G** Comment Status **A** EZ  
 Table reference in PICS PD18 is incorrect. Tables were renumbered.  
 SuggestedRemedy  
 Change table reference to 33-17 in Value/Comment field.  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.8.3.2 P119 L27 # 292  
 Nadeau, Gerard  
 Comment Type **G** Comment Status **A** EZ  
 PICS PD24 is specific to Type 2 PDs therefore the Status field needs to indicate as such.  
 SuggestedRemedy  
 Change 'Status' field from 'M' to 'PDT2:M'  
 Response Response Status **C**  
 ACCEPT.



IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.8.3.2 P119 L43 # 293  
Nadeau, Gerard

Comment Type **G** Comment Status **A**

Text has changed from D3.0 making PICS PD30 invalid. Text from D3.0, 33.3.7.2, page 67, line 33 that created the PICS: 'The specification for PPort in Table 33-17 shall apply for the input power averaged over 1 second.' Current text in 33.3.7.2, page 78, line 6 does not have a shall statement. Either delete the PICS statement or insert the word shall in the text.

SuggestedRemedy

Delete PICS PD30.

Response Response Status **C**

ACCEPT.

Cl 33 SC 33.8.3.2 P119 L53 # 294  
Nadeau, Gerard

Comment Type **G** Comment Status **A** TEZ

Text in 33.3.7.3, page 78, line 33 references 'Tdelay min', not 'TInrush max' as stated in the PICS PD32.

SuggestedRemedy

Change 'TInrush max' to 'Tdelay min' in the Value/Comment field of PICS PD32.

Response Response Status **C**

ACCEPT.

Cl 33 SC 33.8.3.2 P120 L7 # 295  
Nadeau, Gerard

Comment Type **G** Comment Status **A** TEZ

Text has changed in 33.3.7.3 from D3.0. D3.0 text: At any static voltage at the PI, and any PD operating condition, the peak current shall not exceed PPort max for more than 50 ms maximum and 5% duty cycle maximum. D3.3 text: At any static voltage at the PI, and any PD operating condition, the peak power shall not exceed PClass\_PD max for more than 50 ms maximum and 5% duty cycle maximum.

SuggestedRemedy

Change PICS PD34 as follows: Change the 'Feature' field to: 'Peak power' Change the 'Value/Comment' to: 'Not to exceed PClass\_PD max for more than 50 ms max and 5 % duty cycle max'

Response Response Status **C**

ACCEPT.

Cl 33 SC 33.8.3.2 P120 L12 # 296  
Nadeau, Gerard

Comment Type **G** Comment Status **A** EZ

PICS PD36 and PD37, equations were renumbered in the text.

SuggestedRemedy

Change 33-8 on line 12 to 33-9 Change 33-9 on line 14 to 33-10

Response Response Status **C**

ACCEPT.

Cl 33 SC 33.8.3.2 P120 L22 # 297  
Nadeau, Gerard

Comment Type **G** Comment Status **A** TEZ

Text supporting PICS PD40 has been deleted from D3.0 to D3.3. D3.0 Text, in 33.3.7.5, page 69, line 37: 'The PD shall operate below the "PD upperbound template," defined in 33.2.9.9 and Figure 33-14, during transient conditions lasting greater than 10 ms.'

SuggestedRemedy

Delete PICS PD40.

Response Response Status **C**

ACCEPT.

Cl 33 SC 33.8.3.2 P120 L25 # 298  
Nadeau, Gerard

Comment Type **G** Comment Status **A** TEZ

Text supporting PICS PD41, subclause 33.3.7.6 has been completely rewritten from D3.0 to D3.3. Updateing the Feature field in PICS PD41 makes the PICS statement more clear.

SuggestedRemedy

Replace PICS PD41 'Feature' field as follows: 'Behavior during transients at the PSE PI'

Response Response Status **C**

ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.8.3.2 P121 L47 # 299  
Nadeau, Gerard

Comment Type G Comment Status A TEZ

Value/Comment field: for 10Mb/s PHYs the text in 33.4.3, page 84, line 30 states the frequency range is up to 100 MHz, not 20 MHz as stated in the PICS. D3.0 also stated up to 100MHz.

SuggestedRemedy

Change 20 Mhz to 100MHz in PICS EL13.

Response Response Status C

ACCEPT.

Cl 33 SC 33.8.3.2 P122 L10 # 300  
Nadeau, Gerard

Comment Type G Comment Status A

Text supporting PICS EL15 has been struck since D3.0. D3.0 text, 33.4.4, page 74, line45: 'The magnitude of the common-mode AC voltage shall not exceed 50 mV peak-to-peak measured at all other PIs.'

SuggestedRemedy

Delete PICS EL15.

Response Response Status C

ACCEPT.

Cl 33 SC 33.8.3.2 P122 L48 # 301  
Nadeau, Gerard

Comment Type G Comment Status A TEZ

Insert PICS due to new text in 33.4.8, page 87, line 51.

SuggestedRemedy

Insert new PICS after PSEEL3 and renumber. Item Feature Subclause Value/Comment Status Support PSEEL\_X Channel unbalance 33.4.8 Less than or equal MIDA: Yes[] current for Type 2 to Type 1 Iunb. M N/A[] Midspans that support 100BASE-TX

Response Response Status C

ACCEPT IN PRINCIPLE.

Insert new PICS after PSEEL3 and renumber as appropriate:

PSEEL#: Channel unbalance for Alternative A Midspan PSEs that support 100BASE-TX; 33.4.8; Less than or equal to Type 1 Iunb; MIDA:M; Yes[ ] N/A[ ]

Cl 33 SC 33.8.3.4 P L # 302  
Nadeau, Gerard

Comment Type G Comment Status A TEZ

Insert PICS due to new text in 33.4.8, page 88, line 1.

SuggestedRemedy

Insert new PICS after EL20. Item Feature Subclause Value/Comment Status Support EL21 Channel unbalance 33.4.8 Meet requirements of M Yes[] current for Type 2 clause 25 in presence N/A[] Enpoint PSE and PDs (Iunb/2) that support 100BASE-TX

Response Response Status C

ACCEPT IN PRINCIPLE.

Insert new PICS after EL20 and renumber as appropriate:

EL#: Channel unbalance; 33.4.8; 100BASE-TX Type 2 Endpoint PSEs and Type 2 PDs meet requirements of Clause 25 in presence of (Iunb/2); M; Yes[ ] N/A[ ]

Cl 33 SC 33.8.3.5 P123 L36 # 303  
Nadeau, Gerard

Comment Type G Comment Status A EZ

Equation and equation number have changed in the text, 33.4.9.2, page 91, line 23. PICS PSEEL13 requires an update.

SuggestedRemedy

Replace PICS PSEEL13 Value/Comment field as follows: 'Exceed transfer function gain expressed in equation 33-19 from 0.1 MHz to 1 MHz at the pins of the PI used as 100BASE-TX transmit pins'

Response Response Status C

ACCEPT.

Cl 33 SC 33.8.3.5 P123 L41 # 304  
Nadeau, Gerard

Comment Type G Comment Status A EZ

Text and subclause reference 33.4.9.2.1, page 91, line 29 has changed from D3.0 (33.4.9.2). PICS PSEEL14 needs to be updated.

SuggestedRemedy

Replace existing PSEEL14 fields as follows: Subclause: 33.4.9.2.1 Status: MIDA:M

Response Response Status C

ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.8.3.5 P123 L40 # 305  
Nadeau, Gerard

Comment Type **G** Comment Status **A** TEZ

Insert PICS statement. Additional text in 33.4.9.2, page 91, line 29 defines another PICS.

*SuggestedRemedy*

Insert new PICS after existing PSEEL13 and renumber. Item Feature Subclause Value/Comment Status Support PSEEL\_X Alternative A Midspan 33.4.9.2 Between 0 mA and MIDA:M Yes[] DC bias current (Ibias) (Iunb / 2) mA defined N/A[] in Table 33-11

Response Response Status **C**

ACCEPT IN PRINCIPLE.

Insert new PICS after PSEEL13 and renumber as appropriate:

PSEEL#; Alternative A Midspan PSE DC bias current (Ibias); 33.4.9.2; Between 0 mA and (Iunb/2) mA; MIDA:M; Yes[ ] N/A[ ]

Cl 33 SC 33.8.3.5 P123 L44 # 306  
Nadeau, Gerard

Comment Type **G** Comment Status **A** TEZ

Insert PICS: 33.4.9.2.1, page 91, line 38 defines another PICS. Insert PICS statement.

*SuggestedRemedy*

Insert new PICS after existing PSEEL14 and renumber. Item Feature Subclause Value/Comment Status Support PSEEL\_X Alternative A Midspan 33.4.9.2.1 From output MIDA:M Yes[] transfer function termination to the N/A[] measurement Midspan PSE input

Response Response Status **C**

ACCEPT IN PRINCIPLE.

Insert new PICS after PSEEL14 and renumber as appropriate:

PSEEL#; Alternative A Midspan PSE transfer function measurement; 33.4.9.2.1; From output termination to the Midspan PSE input; MIDA:M; Yes[ ] N/A[ ]

Cl 33 SC 33.8.3.5 P122 L46 # 307  
Nadeau, Gerard

Comment Type **G** Comment Status **A**

Insert a PICS specific to the PSE to be consistent with a similar PICS specific to the PD (PDEL1).

*SuggestedRemedy*

Insert new PICS after existing PSEEL2 and renumber. Item Feature Subclause Value/Comment Status Support PSEEL\_X PSE common-mode test 33.4.4 The PIs that require M Yes[] requirement power shall be N/A[] terminated as illustrated in Figure 33-24

Response Response Status **C**

ACCEPT IN PRINCIPLE.

Insert new PICS after PSEEL2 and renumber as appropriate:

PSEEL#; PSE common-mode test requirement; 33.4.4; The PIs that require power terminated as illustrated in Figure 33-24; M; Yes[ ]

Cl 33 SC 33.8.3.7 P124 L2 # 308  
Nadeau, Gerard

Comment Type **G** Comment Status **A** EZ

Subclauses 33.8.3.7 and 33.8.3.8 are not in sequence with the rest of the PICS in relation to the clause numbers they reference (33.7...). Suggest they be moved to follow 33.8.3.10 which reference 33.6... and renumber the clauses as necessary.

*SuggestedRemedy*

Move 33.8.3.7 and 33.8.3.8 in order after 33.8.3.10 and renumber. 33.8.3.9 becomes 33.8.3.7 Management function requirements 33.8.3.10 becomes 33.8.3.8 Data Link Layer classification requirements 33.8.3.7 becomes 33.8.3.9 Environmental spec... to PSEs and PDs 33.8.3.8 becomes 33.8.3.10 Environmental spec... to the PSE

Response Response Status **C**

ACCEPT IN PRINCIPLE.

Move 33.8.3.7 and 33.8.3.8 in order after 33.8.3.10 and renumber as appropriate.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.8.3.9 P125 L41 # 309  
Nadeau, Gerard

Comment Type **G** Comment Status **A** EZ

Subclause 33.5.1.2.1 now reserves 2 bits instead of 1 bit (change from D3.0 to D3.3). Need to update PICS MF20.

*SuggestedRemedy*

Change the 'Feature' to read: 'Reserved bits (12.15:14)'

Response Response Status **C**

ACCEPT.

Cl 33 SC 33.8.3.9 P126 L15 # 310  
Nadeau, Gerard

Comment Type **G** Comment Status **A** EZ

Subclause reference is incorrect and the state name is not quite correct. Update.

*SuggestedRemedy*

Change the fields in MF27 as follows. Subclause: 33.5.1.2.6 Value/Comment: Replace ERROR\_DELAY with ERROR\_DELAY\_SHORT

Response Response Status **C**

ACCEPT.

Cl 33 SC 33.8.3.10 P127 L8 # 311  
Nadeau, Gerard

Comment Type **G** Comment Status **A**

Insert new PICS DLL1 and renumber as necessary. Text in 33.6, page 97, line13 defines a new PICS.

*SuggestedRemedy*

Insert new PICS DLL1 and renumber. Item Feature Subclause Value/Comment Status Support DLL1 Reserved fields in 33.6 Contain zero and M Yes[] DTE Power via MDI reserved fields in N/A[] TLVs received TLVs ignored

Response Response Status **C**

ACCEPT IN PRINCIPLE.

Insert new PICS at beginning of 33.8.3.10, and renumber as appropriate:

DLL1; Reserved fields; 33.6; Reserved fields in DTE Power via MDI TLVs are transmitted as zeroes and ignored upon receipt; M; Yes[ ] N/A[ ]

Cl 33 SC 33.8.3.10 P127 L17 # 312  
Nadeau, Gerard

Comment Type **G** Comment Status **A** TEZ

Text supporting PICS DLL4, DLL5 and DLL6 has been changed since D3.0 (33.7.1 and 33.7.2). New text in current draft 33.6.1 and 33.6.2 cannot define the current PICS. Delete them.

*SuggestedRemedy*

Remove PICS DLL4, DLL5 and DLL6 and renumber.

Response Response Status **C**

ACCEPT.

Cl 33 SC 33.8.3.10 P127 L29 # 313  
Nadeau, Gerard

Comment Type **G** Comment Status **A** TEZ

PICS DLL8 Value/Comment field requires changing. Text in 33.6.2.1.1, page 98, line 35 defines the change.

*SuggestedRemedy*

Change Value/Comment field to read: 'Set according to Table 33-23.'

Response Response Status **C**

ACCEPT.

Cl 33 SC 33.8.3.10 P127 L46 # 314  
Nadeau, Gerard

Comment Type **G** Comment Status **A** TEZ

Value/Comment field requires an update. Text in 33.6.2.1.3, page 98, line 52 has changed.

*SuggestedRemedy*

Change Value/Comment field to read: 'Set to PD priority PSE advertises to assign to the PD'

Response Response Status **C**

ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.8.3.10 P127 L50 # 315  
 Nadeau, Gerard  
 Comment Type **G** Comment Status **A** EZ  
 Table number in text has changed to 33-24 (page 99).  
 SuggestedRemedy  
 Change table reference in Value/Comment field to 33-24.  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.8.3.10 P127 L52 # 316  
 Nadeau, Gerard  
 Comment Type **G** Comment Status **A** TEZ  
 Text has been deleted since D3.0, PICS DLL14 no longer defined in the current text. Delete the PICS statement. D3.0 text that supported the PICS. 33.7.2.3 Actual power type/source/priority The actual power type/source/priority field shall contain a bit-map of the actual power type, source, and priority defined in Table 33-22.  
 SuggestedRemedy  
 Delete current PICS DLL14.  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.8.3.10 P127 L52 # 317  
 Nadeau, Gerard  
 Comment Type **G** Comment Status **A**  
 Insert a new PICS DLL14 after the current DLL13. New text in 33.6.2.3, page 99, line 25 defines the PICS.  
 SuggestedRemedy  
 Insert new PICS after the current DLL13 and renumber. Item Feature Subclause Value/Comment Status Support DLL\_X PSE allocated power 33.6.2.3 Contains current DLLC:M Yes[] value allocated power defined in Table 33-25  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 Insert new PICS after DLL13 and renumber as appropriate:  
 PSE#; PSE allocated power value; 33.6.2.3; Contains current value for allocated power as defined in Table 33-25; DLLC:M; Yes[ ] N/A[ ]

Cl 33 SC 33.8.3.10 P128 L6 # 318  
 Nadeau, Gerard  
 Comment Type **G** Comment Status **A** TEZ  
 Text in 33.6.5 has been changed since D3.0. Delete the current DLL15 PICS statement and insert new PICS statements to be defined in additional comments. Current text cannot support DLL15 PICS.  
 SuggestedRemedy  
 Delete PICS DLL15.  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.8.3.10 P128 L6 # 319  
 Nadeau, Gerard  
 Comment Type **G** Comment Status **A**  
 Insert new PICS statement as a result of the significant changes to the text in 33.6.5 since D3.0. (1 of 5)  
 SuggestedRemedy  
 Insert before current PICS DLL16 Item Feature Subclause Value/Comment Status Support DLL\_X Type 2 PSE LLDPDU 33.6.5 Within 10 seconds DLLC:M Yes[] transmission of DLLC being enabled N/A[] as indicated by the variable pse\_dll\_enabled  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 Insert new PICS before DLL16 and renumber as appropriate:  
 DLL#; Type 2 PSE LLDPDU; 33.6.5; Transmitted within 10 seconds of Data Link Layer classification engine being enabled as indicated by the variable pse\_dll\_enabled.; DLLC:M; Yes[ ] N/A[ ]

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.8.3.10 P128 L6 # 320  
Nadeau, Gerard

Comment Type **G** Comment Status **A**

Insert new PICS statement as a result of the significant changes to the text in 33.6.5 since D3.0. (2 of 5)

*SuggestedRemedy*

Insert before current PICS DLL16 Item Feature Subclause Value/Comment Status Support DLL\_X Type 1 PSE LLDPDU 33.6.5 When PSE DLLC engine DLLC:M Yes[] transmission is ready as indicated N/A[] by the variable pse\_dll\_ready

Response Response Status **C**

ACCEPT IN PRINCIPLE.

Insert new PICS before current DLL16, and renumber as appropriate:

DLL#; Type 1 PSE LLDPDU; 33.6.5; Transmitted when PSE Data Link Layer classification engine is ready as indicated by the variable pse\_dll\_ready; DLLC:M; Yes[ ] N/A[ ]

Cl 33 SC 33.8.3.10 P128 L6 # 322  
Nadeau, Gerard

Comment Type **G** Comment Status **A**

Insert new PICS statement as a result of the significant changes to the text in 33.6.5 since D3.0. (4 of 5)

*SuggestedRemedy*

Insert before current PICS DLL16 Item Feature Subclause Value/Comment Status Support DLL\_X PSE transmission 33.6.5 Within 10 seconds DLLC:M Yes[] of an LLDPDU during of receipt of an N/A[] normal operation LLDPDU with a different 'PD requested power value'

Response Response Status **C**

ACCEPT IN PRINCIPLE.

Insert new PICS before DLL16 and renumber as appropriate:

DLL#; PD requested power value change; 33.6.5; LLDPDU with updated "PSE allocated power value" sent within 10 seconds; DLLC:M; Yes[ ] N/A[ ]

Cl 33 SC 33.8.3.10 P128 L6 # 321  
Nadeau, Gerard

Comment Type **G** Comment Status **A**

Insert new PICS statement as a result of the significant changes to the text in 33.6.5 since D3.0. (3 of 5)

*SuggestedRemedy*

Insert before current PICS DLL16 Item Feature Subclause Value/Comment Status Support DLL\_X Set state variable 33.6.5 Within 5 minutes DLLC:M Yes[] pd\_dll\_ready of DLLC being enabled N/A[] as indicated by the variable pd\_dll\_enabled

Response Response Status **C**

ACCEPT IN PRINCIPLE.

Insert new PICS before DLL16 and renumber as appropriate:

DLL#; PD DLL ready; 33.6.5; Set state variable pd\_dll\_ready within 5 minutes of Data Link Layer classification being enabled as indicated by pd\_dll\_enabled.; DLLC:M; Yes[ ] N/A[ ]

Cl 33 SC 33.8.3.10 P128 L6 # 323  
Nadeau, Gerard

Comment Type **G** Comment Status **A**

Insert new PICS statement as a result of the significant changes to the text in 33.6.5 since D3.0. (5 of 5)

*SuggestedRemedy*

Insert before current PICS DLL16 Item Feature Subclause Value/Comment Status Support DLL\_X PD transmission 33.6.5 Within 10 seconds DLLC:M Yes[] of an LLDPDU during of receipt of an N/A[] normal operation LLDPDU with a different 'PSE allocated power value'

Response Response Status **C**

ACCEPT IN PRINCIPLE.

Insert new PICS before DLL16 and renumber as appropriate:

DLL#; PSE allocated power value change; 33.6.5; LLDPDU with updated "PD requested power value" sent within 10 seconds; DLLC:M; Yes[ ] N/A[ ]

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.8.2.4 P112 L11 # 324  
Nadeau, Gerard

Comment Type **G** Comment Status **A**

Nowhere in the PICS are the 'Items' \*END, \*ENDA and \*ENDB used. They were most likely defined but never needed when drafting the PICS.

*SuggestedRemedy*

Delete the 'Items' \*END, \*ENDA and \*ENDB

Response Response Status **C**

ACCEPT.

Cl 00 SC 0 P L # 325  
Nadeau, Gerard

Comment Type **G** Comment Status **A** EZ

\*\*\* Comment submitted with the file 3153200024-GRN\_comments.csv attached \*\*\*

This comment is to ensure that all comments supplied by Gerard Nadeau are in fact captured. Comments were supplied in 802.3 Working Group ballot file format and were manually transferred in to the inferior IEEE ballot tool. The original comment file is attached to ensure completeness.

*SuggestedRemedy*

Review Rogue comments entered by the chair and verify all of Mr Nadeau's comments are included.

Response Response Status **C**

ACCEPT.

Accepting comment results in no change to text.

Cl 33 SC 33.1.4.1 P38 L3 # 326  
McCormack, Meghan

Comment Type **G** Comment Status **R**

\*\*\* Comment submitted with the file 31532100024-GRN\_comments.csv attached \*\*\*

Remove extra commas in line "Type 2 operation requires Class D, or better, cabling as"

*SuggestedRemedy*

Should read "Type 2 operation requires Class D or better cabling as"

Response Response Status **C**

REJECT.

Ed note: note referring to attachment was mistakenly added in the Rogue comment interface. Please ignore.

The commas are intentional to purposely draw attention to the fact that cabling can be better than specified.

Cl 33 SC 33.2 P38 L33 # 327  
McCormack, Meghan

Comment Type **G** Comment Status **A**

\*\*\* Comment submitted with the file 31532200024-GRN\_comments.csv attached \*\*\*

Insert colon after "are" in the second sentence of the paragraph and start list elements with "to"

*SuggestedRemedy*

Should read "The PSE's main functions are: to search the link section for a PD, to supply power to the detected PD through the link section, to monitor the power on the link section, and to remove power when no longer requested or required, returning to the searching state."

Response Response Status **C**

ACCEPT.

Ed note: note referring to attachment was mistakenly added in the Rogue comment interface. Please ignore.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.1 P38 L51 # 328  
McCormack, Meghan

Comment Type G Comment Status A EZ

\*\*\* Comment submitted with the file 31532300024-GRN\_comments.csv attached \*\*\*

Either add a comma to the first sentence or subtract one from the second (add being preferred.) Be consistent with lists

*SuggestedRemedy*

Should read "PSEs can be compatible with 10BASE-T, 100BASE-TX, and/or 1000BASE-T. PSEs may support either Alternative A, Alternative B, or both." or "PSEs can be compatible with 10BASE-T, 100BASE-TX and/or 1000BASE-T. PSEs may support either Alternative A, Alternative B or both."

Response Response Status C

ACCEPT IN PRINCIPLE.

FYI: The comment tool added a bogus reference to an attachment that does not exist.

Should read "PSEs can be compatible with 10BASE-T, 100BASE-TX, and/or 1000BASE-T. PSEs may support either Alternative A, Alternative B, or both."

Cl 33 SC 33.2.3 P43 L42 # 329  
McCormack, Meghan

Comment Type G Comment Status A EZ

\*\*\* Comment submitted with the file 31532400024-GRN\_comments.csv attached \*\*\*

Add commas around "in some cases"

*SuggestedRemedy*

Should read "For the purposes of data transfer, the type of PSE data port is relevant to the far-end PD and, in some cases, to the cabling system between them."

Response Response Status C

ACCEPT.

Ed note: note referring to attachment was mistakenly added in the Rogue comment interface. Please ignore.

Cl 33 SC 33.2.3 P43 L42 # 330  
McCormack, Meghan

Comment Type G Comment Status R

\*\*\* Comment submitted with the file 31532500024-GRN\_comments.csv attached \*\*\*

Add commas around "in some cases"

*SuggestedRemedy*

Should read "For the purposes of data transfer, the type of PSE data port is relevant to the far-end PD and, in some cases, to the cabling system between them."

Response Response Status C

REJECT.

Exact duplicate of 329, which is in the EZ bucket.

Ed note: note referring to attachment was mistakenly added in the Rogue comment interface. Please ignore.

Cl 33 SC 33.2.3 P43 L48 # 331  
McCormack, Meghan

Comment Type G Comment Status R pics

The paragraph does not make proper sense, specifically the phrase "or both" does not in light of the second sentence unless the PSE is intended to have multiple link segments.

*SuggestedRemedy*

Should read "A PSE shall implement Alternative A or Alternative B. 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." A PSE can not truly 'implement' something it is prohibited from 'operating.'

Response Response Status C

REJECT.

This is legacy text. The change would prevents a PSE from providing one of two alternatives.



IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.4.1 P44 L24 # 332  
McCormack, Meghan

Comment Type G Comment Status A EZ

The phrase "that is" is unnecessary and slightly awkward.

SuggestedRemedy

Should read "If a PSE performing detection using Alternative B detects an open circuit (see 33.2.7.3) on the link section, then that PSE may optionally omit the detection backoff."

Response Response Status C

ACCEPT.

Cl 00 SC 0 P L # 333  
McCormack, Michael Texas Instruments

Comment Type GR Comment Status R mgmt

I am unsure where to fix this, but, it appears to me that we have made all type 2 PDs managed devices and have triggered support for management for all clauses implemented by a Type 2 PD. This is, I believe, and unintended consequence of using LLDP for handshaking.

SuggestedRemedy

Not sure how to fix.

Response Response Status U

REJECT.

discussed but no concensus, rejected by default

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Some snips from offline discussions:

"So either we need to change IEEE 802.3at to match IEEE 802.3bc or IEEE P802.3bc to match IEEE 802.3at next week. If we decide to go with LLDP being a separate containment tree as IEEE P802.3bc is at the moment we have solved the above problem - if we don't we need to change the packages in IEEE P802.3at to allow LLDP to be separate from the other attributes."

"Since we voted to make 802.3at contingent on 802.3bc, I think we should change 802.3at to match 802.3bc. Otherwise we will have a mismatch. Also the attributes corresponding to the legacy Power TLV presently follow the containment in 802.3bc. So it makes sense to put all the attributes related to PoE within the same containment."

Cl 33 SC 33.2.4.4 P45 L30 # 334  
McCormack, Meghan

Comment Type G Comment Status A EZ

"when" is unnecessary

SuggestedRemedy

Should read "If monitoring both components of the MPS, the DC component of MPS" or you could add "when" on line 33.

Response Response Status C

ACCEPT IN PRINCIPLE.

Should read "If monitoring both components of the MPS, the DC component of MPS."

Cl 33 SC 33.2.4.4 P47 L10 # 335  
McCormack, Meghan

Comment Type G Comment Status A EZ

"with pse\_skips\_event2." seems unnecessary

SuggestedRemedy

Should read "The PSE can choose to bypass a portion of the classification state flow."

Response Response Status C

ACCEPT.

"The PSE can choose to bypass a portion of the classification state flow."

Cl 33 SC 33.2.4.5 P47 L41 # 336  
McCormack, Meghan

Comment Type G Comment Status A EZ

Period following "addition" should be a colon (if the text following the word is the addition.)

SuggestedRemedy

Should read "All timers operate in the manner described in 14.2.3.2 with the following addition: A timer is reset . . ."

Response Response Status C

ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.2.4.5 P46 L12 # 337  
 McCormack, Meghan  
 Comment Type G Comment Status A EZ  
 Replace comma with semicolon  
 SuggestedRemedy  
 Should read "... MPS; see ..."  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Assume this is page 48.  
 The editor should adjust this text as appropriate. The suggested solution is consistent with text on the same page.

Cl 33 SC 33.2.4.5 P46 L15 # 338  
 McCormack, Meghan  
 Comment Type G Comment Status A EZ  
 Replace comma with semicolon  
 SuggestedRemedy  
 Should read "... time; see ..."  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Assume this is page 48.  
 The editor should adjust this text as appropriate. The suggested solution is consistent with text on the same page.

Cl 33 SC 33.2.4.5 P46 L17 # 339  
 McCormack, Meghan  
 Comment Type G Comment Status A EZ  
 Replace comma with semicolon  
 SuggestedRemedy  
 Should read "... turn-on; see ..."  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 The editor should adjust this text as appropriate. The suggested solution is consistent with text on the same page.

Cl 33 SC 33.2.4.5 P49 L6 # 340  
 McCormack, Meghan  
 Comment Type G Comment Status A EZ  
 Verb does not agree with subject  
 SuggestedRemedy  
 Should read "This function returns a variable: ", also fix on line 15  
 Response Response Status C  
 ACCEPT.  
 On line 6 and 15, replace "return" with "returns."

Cl 33 SC 33.2.5 P52 L46 # 341  
 McCormack, Meghan  
 Comment Type G Comment Status A EZ  
 Reads better without the comma and "may"  
 SuggestedRemedy  
 Should read "Also, a PSE may successfully detect a PD but then opt not to power the detected PD."  
 Response Response Status C  
 ACCEPT.

Cl 33 SC 33.2.6 P53 L21 # 342  
 McCormack, Meghan  
 Comment Type G Comment Status A EZ  
 Extra commas  
 SuggestedRemedy  
 Should read "A functional equivalent of the detection circuit that has no source impedance limitation but restricts the PSE detection circuit to the first quadrant is shown in Figure 33-13."  
 Response Response Status C  
 ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.3.5.1 P75 L5 # 343  
 McCormack, Meghan  
 Comment Type **G** Comment Status **R**  
 Extra commas  
 SuggestedRemedy  
 Should read "A PD shall present one and only one classification signature during classification." This may be unnecessary, it is technically correct either way.  
 Response Response Status **C**  
 REJECT.  
 The extra commas are there for emphasis.

Cl 33 SC 33.3.7.6 P80 L30 # 344  
 McCormack, Meghan  
 Comment Type **G** Comment Status **A** EZ  
 Poor syntax and indentation  
 SuggestedRemedy  
 Replace the period after the word "following" with a colon and indent the paragraph immediately below (lines 31 to 35)  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 Editor to ask the IEEE editors for guidance for this structure.

Cl 33 SC 33.3.7.9 P81 L25 # 345  
 McCormack, Meghan  
 Comment Type **G** Comment Status **A** EZ  
 Poor syntax - delete the extra "or", add comas.  
 SuggestedRemedy  
 Should read "instability at the PSE side, the PD side, or both due to the presence"  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.3.8 P81 L41 # 346  
 McCormack, Meghan  
 Comment Type **G** Comment Status **A** EZ  
 Missing word "to"  
 SuggestedRemedy  
 Should read "Current draw equal to or above the minimum"  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.4.1 P82 L26 # 347  
 McCormack, Meghan  
 Comment Type **G** Comment Status **R**  
 The comma following the parenthetical expression "if any" is unnecessary.  
 SuggestedRemedy  
 Remove the comma following "(if any)" in two places.  
 Response Response Status **C**  
 REJECT.  
 Nonrestrictive appositives are short phrases that further elaborate a subject. Sometimes, appositives start with or, such as, particularly, especially, and similar words. Appositives can also be used to identify or explain a preceding name. They should be offset by commas.

Cl 33 SC 33.4.4 P85 L45 # 348  
 McCormack, Meghan  
 Comment Type **G** Comment Status **A**  
 The second occurrence of the work "with" is not necessary.  
 SuggestedRemedy  
 Should read "The PIs shall be tested with the PHY transmitting data, an operating PSE or PD, and the following PSE"  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 OBE 208

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.4.9.1 P90 L12 # 349  
 McCormack, Meghan  
 Comment Type **G** Comment Status **A** EZ  
 The texts says there are three types of midspans but the list enumerates four  
 SuggestedRemedy  
 Make the text say four or eliminate a list item  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.5 P92 L28 # 350  
 McCormack, Meghan  
 Comment Type **G** Comment Status **A**  
 A comma is required after the parenthetical item MDIO.  
 SuggestedRemedy  
 Should read "(MDIO), then"  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.5.1.1 P93 L24 # 351  
 McCormack, Meghan  
 Comment Type **G** Comment Status **A**  
 Formatting problem, text which should appear above the table 33-21 appears below it.  
 SuggestedRemedy  
 Move text.  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.5.1.1 P93 L35 # 352  
 McCormack, Meghan  
 Comment Type **G** Comment Status **A**  
 Commas missing.  
 SuggestedRemedy  
 Text should read "A PSE that supports Data Link Layer classification, but does not allow the function to be disabled, shall ignore writes to bit 11.5 and shall return a value of one when read."  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.5.1.1 P93 L45 # 353  
 McCormack, Meghan  
 Comment Type **G** Comment Status **A**  
 Commas missing.  
 SuggestedRemedy  
 Text should read "A PSE that supports Physical Layer classification, but does not allow the function to be disabled, shall ignore writes to bit 11.4 and shall return a value of one when read."  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.5.1.1.4 P94 L20 # 354  
 McCormack, Meghan  
 Comment Type **G** Comment Status **A**  
 Poor economizing of words making the text read poorly  
 SuggestedRemedy  
 Text should read "setting bit 11.1 to a zero and bit 11.0 to a one." That is strike the plural "bits" and add bit twice.  
 Response Response Status **C**  
 ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33 SC 33.5.1.2.1 P95 L34 # 355  
 McCormack, Meghan  
 Comment Type **G** Comment Status **A**  
 Extra comma should be deleted.  
 SuggestedRemedy  
 Text should read "Entity writes to a reserved bit it should use a value of zero."  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.6.7.1 P107 L18 # 358  
 McCormack, Meghan  
 Comment Type **G** Comment Status **A**  
 The second occurrence of "then" in the sentence is unnecessary.  
 SuggestedRemedy  
 Should read ". . . MIRROR UPDATE state and returns to the . . ."  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.5.1.2.2 P95 L38 # 356  
 McCormack, Meghan  
 Comment Type **G** Comment Status **A**  
 Missing the word "that"  
 SuggestedRemedy  
 Text should read "bit 12.13 indicates that the PSE supports"  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.6.7.1 P107 L23 # 359  
 McCormack, Meghan  
 Comment Type **G** Comment Status **A**  
 Add a comma at the end of the line  
 SuggestedRemedy  
 The entire sentence should read "The PSE may decide to ignore the request, in which case it returns to the RUNNING state, or it may decide to change the PD allocation by entering the PSE POWER REALLOCATION state and behaves as described above."  
 Response Response Status **C**  
 ACCEPT.

Cl 33 SC 33.5.1.2.9 P96 L29 # 357  
 McCormack, Meghan  
 Comment Type **G** Comment Status **A**  
 Is "Delivering" supposed to be capitalized? If so should "power" be too?  
 SuggestedRemedy  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 Change to "Delivering power". Make consistent in rest of section.

Cl 33A SC 33A.1 P131 L26 # 360  
 McCormack, Meghan  
 Comment Type **G** Comment Status **A** **EZ**  
 Missing word "a"  
 SuggestedRemedy  
 Should read ". . . which is a function of the . . ."  
 Response Response Status **C**  
 ACCEPT.

IEEE P802.3at D4.0 PoEplus comments

Cl 33A SC 33A.1 P131 L42 # 361  
 McCormack, Meghan  
 Comment Type G Comment Status A EZ  
 Missing comma  
 SuggestedRemedy  
 Should read "... at short cable length, or by presenting ..."  
 Response Response Status C  
 ACCEPT.

Cl 33A SC 33A.2 P133 L41 # 362  
 McCormack, Meghan  
 Comment Type G Comment Status A EZ  
 Superfluous comma and missing "and"  
 SuggestedRemedy  
 Should read "Because of this, measuring the PD input impedance is a complicated task and the following guidelines should be followed by the PD vendor:"  
 Response Response Status C  
 ACCEPT.

Cl 33 SC 33.1.3 P37 L21 # 363  
 McCormack, Meghan  
 Comment Type G Comment Status A EZ  
 Missing comma  
 SuggestedRemedy  
 Should read "In an Endpoint PSE and in a PD, the PI is encompassed within the MDI."  
 Response Response Status C  
 ACCEPT.

Cl 33 SC 33.4.2 P84 L16 # 364  
 Cobb, Terry  
 Comment Type T Comment Status A  
 In the figures the matching tolerance on the resistors is missing which could cause the test to fail.  
 Also on pg 85, ln 13, sect 33.4.3; pg 86, ln 38, sect 33.4.4; pg 87, ln 25 sect 33.4.5  
 SuggestedRemedy  
 Add "Resistor matching 1 part in 100" This applies to the center tapped resistors, see af  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Change tolerance from "1%" to "0.5%"

Cl 33 SC 33.4.3 P84 L30 # 365  
 Cobb, Terry  
 Comment Type T Comment Status A  
 The max frequency for the 10Mb/s PHY is only 20 MHz  
 SuggestedRemedy  
 Change to 20 MHz, see af  
 Response Response Status C  
 ACCEPT.