

IEEE P802.3at D3.0 PoEplus comments

CI 33E SC 33E P151 L10 # 1 [REDACTED]  
 Maguire, Valerie The Siemon Company  
 Comment Type E Comment Status X cable  
 Include a reference to channel DC resistance unbalance specifications defined by TIA.  
 SuggestedRemedy  
 Revise text as follows:  
 "The cabling resistance unbalance parameter is specified in this standard in reference to IEC 11801 Edition 2, Clause 6.4.8 or or ANSI/TIA-568-C.2, clause 5.1.2, (reference: 3 percent)."  
 Proposed Response Response Status W  
 reviewed  
 EDITOR NOTE: comment type empty at import, set to E as a default.

CI 33 SC 33.1.1 P23 L50 # 2 [REDACTED]  
 Maguire, Valerie The Siemon Company  
 Comment Type E Comment Status X cable  
 Reference to minimum category of TIA cabling required to support Type 2 operation is missing. Format Standards references to match Objectives text.  
 SuggestedRemedy  
 Incorporate text such as, "Type 2 operation requires ISO/IEC 11801:1995 Class D / ANSI/TIA/EIA-568-B.2 category 5 (or better cabling)."  
 Proposed Response Response Status W  
 reviewed

CI 33 SC 33.1.4.1 P25 L50 # 3 [REDACTED]  
 Maguire, Valerie The Siemon Company  
 Comment Type E Comment Status X cable  
 Reference to minimum category of TIA cabling required to support Type 2 operation is missin  
 SuggestedRemedy  
 Edit text to include a reference to TIA category 5 such as,  
 "Type 2 operation requires Class D as specified in ISO/IEC 11801:1995 / category 5 as specified in ANSI/TIA/EIA-568-B.2 or better cabling."  
 Proposed Response Response Status W  
 This can be found in the note after the section.  
 501

CI 33 SC 33.4.8 P78 L3 # 4 [REDACTED]  
 Maguire, Valerie The Siemon Company  
 Comment Type E Comment Status X cable  
 Include a reference to cabling specifications defined by TIA.  
 SuggestedRemedy  
 Revise text as follows:  
 "The cabling specifications for 100 W balanced cabling are described in ISO/IEC 11801-2002 and ANSI/TIA-568-C.0."  
 Proposed Response Response Status W  
 reviewed

CI 33 SC 33.4.8 P78 L37 # 5 [REDACTED]  
 Maguire, Valerie The Siemon Company  
 Comment Type E Comment Status X cable  
 Include a reference to cabling specifications defined by TIA.  
 SuggestedRemedy  
 Revise text as follows:  
 "ISO/IEC IEC 11801 defines in 5.6.1 and ANSI/TIA-568-C.0 defines in 4.2 two types of Equipment..."  
 Proposed Response Response Status W  
 reviewed

CI 33 SC 33.4.8 P79 L44 # 6 [REDACTED]  
 Maguire, Valerie The Siemon Company  
 Comment Type E Comment Status X cable  
 Include a reference to cabling specifications defined by TIA.  
 SuggestedRemedy  
 Revise text as follows:  
 "...to more than specified 100 m as defined in ISO/IEC 11801 and ANSI/TIA-568-C.0."  
 Proposed Response Response Status W  
 reviewed

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CI 33 SC 33.4.8 P79 L47 # 7  
 Maguire, Valerie The Siemon Company  
 Comment Type E Comment Status X cable  
 Include a reference to cabling specifications defined by TIA.  
 SuggestedRemedy  
 Revise text as follows:  
 "...to more than specified 100 m as defined in ISO/IEC 11801 and ANSI/TIA-568-C.0."  
 Proposed Response Response Status W  
 reviewed

CI 33 SC 33.4.8.1 P80 L9 # 8  
 Maguire, Valerie The Siemon Company  
 Comment Type E Comment Status X cable  
 Include a reference to connector test specifications defined by TIA.  
 Commenter's note: '568-C.2 is pending publication. ANSI/TIA/EIA-568-B.2 is the published (soon to be obsolete) reference.  
 SuggestedRemedy  
 Revise text as follows:  
 "These parameters should be measured using the test procedures of ISO ISO 11801:2002 or ANSI/TIA-568-C.2 for connecting hardware."  
 Proposed Response Response Status W  
 reviewed

CI 33 SC 33.4.8.1.4 P81 L13 # 9  
 Maguire, Valerie The Siemon Company  
 Comment Type E Comment Status X cable  
 Include a reference to patch cord specifications defined by TIA.  
 Commenter's note: '568-C.2 is pending publication. ANSI/TIA/EIA-568-B.2 is the published (soon to be obsolete) reference.  
 SuggestedRemedy  
 Revise text as follows:  
 "..as specified in ISO/IEC 11801:2002 or ANSI/TIA-568-C.2 for insertion loss, NEXT, and return loss for the transmit and receive pairs.  
 Proposed Response Response Status W  
 reviewed

CI 33 SC 33.5.5 P82 L29 # 10  
 Maguire, Valerie The Siemon Company  
 Comment Type E Comment Status X cable  
 Include a reference to channel DC resistance unbalance specifications defined by TIA.  
 SuggestedRemedy  
 Revise text as follows:  
 "The resistance unbalance shall be as specified in IEC 11801 Edition 2, Clause 6.4.8 or ANSI/TIA-568-C.2, clause 5.1.2 (reference: 3 percent)."  
 Proposed Response Response Status W  
 reviewed

CI 33 SC 33.9.3.5 P110 L49 # 11  
 Maguire, Valerie The Siemon Company  
 Comment Type E Comment Status D  
 Include a reference to maximum channel length defined by TIA.  
 SuggestedRemedy  
 Revise text as follows:  
 "Installation of a Midspan PSE will not increase the length to more than 100 m as defined in ISO/IEC 11801 and ANSI/TIA-568-C.0."  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 The text in 33.4.8, pg. 79, line 49 makes no mention of ANSI/TIA-568-C.0.  
 If this document reference is added to the subclause then it should be added to the PICS.

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CI 33 SC 33.9.3.5 P 111 L 29 # 12  
 Maguire, Valerie The Siemon Company

Comment Type E Comment Status D

Include a reference to patch cord specifications defined by TIA.

Commenter's note: '568-C.2 is pending publication. ANSI/TIA/EIA-568-B.2 is the published (soon to be obsolete) reference.

SuggestedRemedy

Revise text as follows:

"...as specified in ISO/IEC 11801-2002 and ANSI/TIA-568-C.2 for insertion loss, NEXT, and return loss for all transmit and receive pairs"

Proposed Response Response Status W

PROPOSED REJECT.

The text in 33.4.8.1.4, pg. 81, line 14 makes no mention of ANSI/TIA-568-C.2.

If this document reference is added to the subclause then it should be added to the PICS.

CI 33 SC 33.9.3.8 P 112 L 27 # 13  
 Maguire, Valerie The Siemon Company

Comment Type E Comment Status D

Include a reference to channel DC resistance unbalance specifications defined by TIA.

SuggestedRemedy

Revise text as follows:

"As specified in IEC 11801 Edition 2 Clause 6.4.8 and ANSI/TIA-568-C.2, clause 5.1.2 (reference: 3 percent)

Proposed Response Response Status W

PROPOSED REJECT.

The text in 33.5.5, pg. 82, lines 29-30 makes no mention of ANSI/TIA-568-C.2, clause 5.1.2.

If this document reference is added to the subclause then it should be added to the PICS.

CI 33B SC 33B P 120 L 8 # 14  
 Maguire, Valerie The Siemon Company

Comment Type E Comment Status X cable

Include a reference to cabling specifications defined by TIA.

SuggestedRemedy

Revise as follows:

"DTE power via MDI is intended to operate over a 100 W balanced cabling infrastructure as described in ISO/IEC 11801 and the ANSI/TIA-568-C families of Standards.

Proposed Response Response Status W

reviewed

CI 33B SC 33B P 120 L 16 # 15  
 Maguire, Valerie The Siemon Company

Comment Type E Comment Status X cable

The TIA BAS Standard has published.

SuggestedRemedy

Merge 3rd and 4th sentences as re-write as follows:

"The ANSI/TIA/EIA-862 Building Automation Systems Cabling Standard is an example of generic cabling requirements for building automation systems used in commercial buildings for a multi-product, multi-vendor environment."

Proposed Response Response Status W

reviewed

CI 33B SC 33B P 120 L 27 # 16  
 Maguire, Valerie The Siemon Company

Comment Type E Comment Status X cable

Include a reference to cabling specifications defined by TIA.

SuggestedRemedy

Revise text as follows:

"It is recommended that a minimum of two outlets be provided per work area as specified in the current standards in ISO/IEC and ANSI/TIA".

Proposed Response Response Status W

reviewed

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CI 33 SC 33.1.4.2 P 26 L 9 # 17  
 Maguire, Valerie The Siemon Company

Comment Type T Comment Status D cable

It is not outside the scope of this Standard to provide guidance on media that will support improved heat dissipation performance. In fact, it is almost negligent not to provide guidance end-users installing new cabling infrastructures on the selection of media types that will provide improved performance for a performance condition (elevated temperature) that is difficult to assess and mitigate in the field.

Note - It is not the commenter's intention that increased PoE Plus currents can be allowed when alternate media is used. This recommendation is just to provide a pointer to media with better heat dissipation properties for the end-user.

*SuggestedRemedy*

Revise note as follows:

"NOTE - Cable current carrying capacity is a function of cable type, cable installation practice: environmental conditions, and PoE system architecture. In environments where the ambient temperature is above 45 degrees C, consider installing cabling with improved heat dissipation characteristics (e.g. category 5 F/UTP, category 5e F/UTP, category 6 F/UTP, category 6A F/UTP, and category 7 S/FTP). In addition, different levels of power delivery can be accomplished with different supply voltages and different cable lengths. It is out of the scope of this standard to address these alternate supply voltage and reduced cable length implementations."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE 509

507, 508, 503, 309

CI 33 SC 33.1.4.2 P 26 L 6 # 18  
 Maguire, Valerie The Siemon Company

Comment Type TR Comment Status D cable

TIA has not completed their homework to provide specific currents at various de-rating temperatures. Furthermore there is a concern that, if plotted out, the ISO numbers from which 10°C value was selected do not follow the I^R profile. This indicates that there may be an error in the ISO analysis.

The commenter will be ready to approve the draft when the TIA analysis is complete and harmonization between TIA and ISO occurs. Note: the next TIA meeting is scheduled for the first week of June, 2008.

*SuggestedRemedy*

Until this issue is resolved between ISO and TIA, change the reduction factor back to 15 degrees C as follows:

"Type 2 operation requires a 15°C reduction in the maximum ambient operating..."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE 509

CI 33 SC 33.2 P 27 L 11 # 19  
 Marris, Arthur Cadence

Comment Type E Comment Status D

Punctuation - commas incorrectly placed

*SuggestedRemedy*

Change

"Characteristics, such as the losses due to overvoltage protection circuits, or power supply inefficiencies, after the PI connector are not accounted for in this specification."

to

"Characteristics, such as the losses due to overvoltage protection circuits or power supply inefficiencies after the PI connector, are not accounted for in this specification."

Proposed Response Response Status W

PROPOSED ACCEPT.

If not OBE by 125, 480

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CI 33B SC 33B P 120 L 9 # 20  
Marris, Arthur Cadence  
Comment Type T Comment Status D cable  
Out of date information  
SuggestedRemedy  
Change  
"Although initial implementations are expected to make use of Clause 33 to provide powered telephones and wireless access points"  
to  
"Although initial implementations have made use of Clause 33 to provide powered IP telephones and wireless access points"  
Proposed Response Response Status W  
PROPOSED ACCEPT.

CI 33 SC 33.2.8.1 P 45 L 46 # 23  
Delveaux, Bill Cisco  
Comment Type E Comment Status D ez class pd  
Substitue variable name for number  
SuggestedRemedy  
Change 51mA to Iclass\_lim Min  
Proposed Response Response Status W  
PROPOSED ACCEPT.

CI 33 SC 33.3.5.1 P 63 L 45 # 24  
Feldman, Daniel Microsemi  
Comment Type TR Comment Status D ez class pd  
Table 33-14  
PD maximum power on class 4 is 29.5W. Should be 25.5W, given 600mA of Icable  
SuggestedRemedy  
Replace 29.5 with 25.5W.  
Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.  
See 43

CI 33 SC 33.3.7 P 66 L 15 # 25  
Feldman, Daniel Microsemi  
Comment Type TR Comment Status D Table 33-17  
Table 33-17  
Vport min is set to be 41V. Should be 42.5V based on 600mA Icable  
SuggestedRemedy  
change the number to 42.5V  
Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.  
See comment 65

CI 33 SC 33.2.4.1 P 33 L 25 # 26  
Patoka, Martin Texas Instruments  
Comment Type E Comment Status D  
Backoff is referred to as a cycle even though it is defined as a period.  
A PSE that is performing Alternative B detection shall not resume detection mode until at least one backoff cycle has elapsed.  
SuggestedRemedy  
A PSE that is performing Alternative B detection shall not resume detection mode until at least one backoff period has elapsed.  
Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE. Comment Type blank, set to E as default.  
frs: Recommend striking this sentence as recommend in 115.

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Cl 33 SC 33.2.4.3 P33 L 51 # 27  
 Patoka, Martin Texas Instruments

Comment Type E Comment Status D  
 Definition is confusing. Also, adding the relationship between the defined variables would be helpful.

Current during inrush period of startup

SuggestedRemedy  
 Current during startup

I propose adding:

Icable <= Icut <= Ilim

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE. Comment Type blank, set to E as default.  
 frs: Accept this and recommend referencing figure 33-14.

Cl 33 SC 33.1.4 P25 L 44 # 28  
 Patoka, Martin Texas Instruments

Comment Type E Comment Status D cable  
 Table 33-1 mixes TIA/EIA and ANSI terms for the cable type.

SuggestedRemedy  
 Suggest changing the CAT3 reference to Class C.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

OBE 518

Cl 33 SC 33.1.3 P25 L 8 # 29  
 Patoka, Martin Texas Instruments

Comment Type E Comment Status D  
 Figure 33-3. The drawing for the medium infers that it begins before the PHY.

SuggestedRemedy  
 Recommend squaring the medium box off to form an elbow to the phy.

Proposed Response Response Status W  
 PROPOSED REJECT.

If this is a problem then it is a problem for F33-1 and F33-2. Disagree that it is a problem.

Cl 33 SC 33.2.4.1 P33 L 13 # 30  
 Patoka, Martin Texas Instruments

Comment Type E Comment Status D  
 Wording is awkward

The PSE shall turn on power after a valid detection in less than Tpon as specified in Table 33-9, if power is to be applied.

SuggestedRemedy  
 IF the PSE decides to turn on power after a valid detection, it must occur in less than Tpon as specified in Table 33-9.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE. frs:  
 If the PSE turns on power after a valid detection, it shall occur in less than Tpon as specified Table 33-9.

Cl 33 SC 33.2.4.1 P33 L 34 # 31  
 Patoka, Martin Texas Instruments

Comment Type E Comment Status D  
 The backoff period is referred to as a fixed time rather than a variable defined in a table - we changed to the later method for other sections.

If a PSE performing detection using Alternative A detects an invalid signature, it should complete a second detection attempt within 2 seconds after the beginning of the first detection attempt.

SuggestedRemedy  
 If a PSE performing detection using Alternative A detects an invalid signature, it should complete a second detection in less than Tdbo (minimum) after the beginning of the first detection attempt.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE. frs:  
 If a PSE performing detection using Alternative A detects an invalid signature, it should complete a second detection in less than the minimum Tdbo after the beginning of the first detection attempt.

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Cl 33 SC 33.2.4.4 P34 L13 # 32  
 Patoka, Martin Texas Instruments

Comment Type E Comment Status D

Wording is confusing.

specifications in Table 33-9 and that require the PSE not to source power. These error conditions are not the same conditions monitored by the state diagrams in Figure 33-11.

SuggestedRemedy

specifications in Table 33-9 and that require the PSE not source power. These error condition are different from those monitored by the state diagrams in Figure 33-11.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. frs:  
 ... specifications in Table 33-9 and that require the PSE not to source power. These error conditions are different from those monitored by the state diagram in Figure 33-11.

Cl 33 SC 33.2 P27 L5 # 33  
 Patoka, Martin Texas Instruments

Comment Type ER Comment Status X

Wording is not exactly correct - this is .af text.

..., and scale power back to the detect level when power is no longer requested or required. also line 11  
 ... or power supply inefficiencies, after the PI connector are not accounted for in this specification.

SuggestedRemedy

..., and remove power when no longer requested or required, returning to the searching state.

...or power supply inefficiencies, within the PSE are not accounted for in this specification.

Proposed Response Response Status W

459 and 125 - two topics in comment

Cl 33 SC 33.2.4.7 P39 L38 # 34  
 Patoka, Martin Texas Instruments

Comment Type ER Comment Status D

Term UCT is not defined. It is used in a number of subsequent diagrams.

SuggestedRemedy

Provide definition.

Proposed Response Response Status W

PROPOSED ACCEPT. frs:

Cl 33 SC 33.2.9 P48 L51 # 35  
 Patoka, Martin Texas Instruments

Comment Type ER Comment Status D

Additional Information reference for Ptype references temperature derating table.

This also applies to lport\_max, item 5, line 32.

SuggestedRemedy

Reference Table 33-1 for l cable.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 frs: related to 213

Cl 33 SC 33.3.5 P63 L11 # 36  
 Patoka, Martin Texas Instruments

Comment Type T Comment Status D class pd

To maintain the ongoing compliance of existing type 1 PDs, the statement should be altered to specify the minimum of class 0 (default or no intentional signature).

A Type 1 PD may implement any of the class signatures in 33.3.5 and 33.7.

SuggestedRemedy

A minimum requirement for a type 1 PD is to present a physical layer Class 0 1-event signature. Optionally, a type 1 PD may implement any of the class signatures in 33.3.5 and 33.7.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Table 33-5 updated to include Type 1, Class 0. See comment 203.

The update of table 33-5 makes it unnecessary to change the text.

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Cl 33 SC 33.3.7.2 P67 L 32 # 37  
 Patoka, Martin Texas Instruments

Comment Type T Comment Status D Pport

While PD peak operating power (Table 33-17 item 7) has provision for different classes, it seems like the input average power (same table item 4) does not. However we know that the PSE has an Icut limit based on the class (Table 33-9 item 8 page 48). Omission of this in the PD section seems to be an oversight.

*SuggestedRemedy*

The input average power should be Pclassmax with Additional information "per Table 33-14" (Section 33.3.5.1, page 63, line 35).

Table 33-14 limits should be titled "Maximum average power drawn by PD" to clarify - note that this is stated in the same section line 26:

A Type 1 PD shall return a Class 0 to 3 signature in accordance with the maximum power drawn as specified by Table 33-14.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change Table 33-14 header from "Maximum power available to PD" to "Maximum average power drawn by PD."

Change class 4 power entry in table 33-14 to "Icable \* Vportmin"

Change Table 33-17 Item 4 maximum to "Pclassmax" with added note See Table 33-14.

Change 33.3.7.2 paragraph

"The maximum value of PPort is obtained as described in 33.2.8 and 33.7."  
 to: "The maximum value of PPort is obtained as described in 33.2.8, Table 33-14, and 33.7."

Interrelated to comment 86

Cl 33 SC 33.2.6.1 P43 L 29 # 38  
 Patoka, Martin Texas Instruments

Comment Type TR Comment Status D

Table 33-4. 1) Neither of the signature offsets (Vos, los) are defined.  
 2) The PSE current offset is inconsistent with the PD offset Table 33-12, p62, l 12.

This is a problem with the .af standard.

*SuggestedRemedy*

- 1) reference figure 33C.20 in Table 33-4 "additional information" column
- 2) edit figure 33C.20 (section 33C.4.1, P143 top) to show Ioffset. If this would be the I axis intercept of the projected line, it is clearly negative (this is correct by calculation and measurement), if it is the I axis intercept of the actual current, then it approaches 0.
- 3) remove los min from table 33-4 to be compatible with Table 33-12.

The choice of the Ioffset definition will make a difference on how this is handled.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

frs: Table 33-4 items 12, and 13 provide the PSE Vos and los requirements, respectively. They differ from the PD in order to provide system margin.

Normative text should not reference informative information.

A normative figure could provide a graphical view of the system PSE and PD detection requirements. The axis could reference variables from Table 33-4 and Table -12.

- 1) reference figure 33C.20 in Table 33-4 "additional information" column
- 2) edit figure 33C.20 (section 33C.4.1, P143 top) to show Ioffset. If this would be the I axis intercept of the projected line, it is clearly negative (this is correct by calculation and measurement), if it is the I axis intercept of the actual current, then it approaches 0.
- 3) remove los min from table 33-4 to be compatible with Table 33-12.

The choice of the Ioffset definition will make a difference on how this is handled.



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Cl 33 SC 33.2.9.6 P 50 L 49 # 39  
 Patoka, Martin Texas Instruments

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

The requirements for inrush between 0V to 10V appear to require a current of inrush (0.4 - 0.45A) by referring to Table 33-9 item 6. This is inconsistent with the desired foldback. Also, the references to the figures should be isolated from item f, as they are helpful to the requirement as a whole, but not the foldback.

*SuggestedRemedy*

f) During startup, for PI voltages between 0 V and 10 V, the max Iinrush requirement is 60mA

See Figure 33C.4, Figure 33C.6, and Figure 33C.23 for additional information.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

frs: The text in item-f was added after the legacy specification release.

It seems unlikely that a PD would draw significant current at voltages below Vvalid (detection)

I suspect this was a typo. Agree with referencing Tables at the bottom of this section.

Cl 33 SC 33.2.9.9 P 52 L 34 # 40  
 Patoka, Martin Texas Instruments

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

The PD curve is for operation when Vport is static. During the ad-hocs this was clear, and is the reason for the note (P51, line 28) relating to the PSE being responsible for the first 10ms.

This needs to be made clear in this section, and the accompanying figure 33-14 so as to not make it appear that the PD requires an internal current limit.

*SuggestedRemedy*

The PD upperbound template, IPDUT, is defined by the following segments, when the PSE output output voltage remains constant:

Also, change the PD limit-line title to "PD upperbound template for static PSE output voltage.

Proposed Response Response Status **O**

frs: See 93. This diagram is valid for static and dynamic PSE voltages.

The note on page 51 line 28 is in the same section as Figure 33-14.

Would moving this note to just below figure 33-14 meet the commentor's needs?

Most PDs do not require a current limiter. PDs with a large input capacitance may be required to limit current. This was discussed during the ad hoc and in the task force.

Cl 33 SC 33.2.9 P 49 L 7 # 41  
 Patoka, Martin Texas Instruments

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

Table 33-9, item 15, Turn on ramp rate (10V/us max).

This contradicts .af table 33-9 item 12, rise time of 15us min (10-90%).

*SuggestedRemedy*

To be equivalent/similar, the rate should be 44V/15us = 2.9V/us max.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

frs: This approach is reasonable. The task force should discuss if the rise time was 10-90% c 20-80% before calculating a value.

Cl 33 SC 33.2.1 P 27 L 24 # 42  
 Patoka, Martin Texas Instruments

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

The following requirement from .af was removed:

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.

So as to not make existing market solutions seem outdated, insufficient, or incomplete, this requirement should remain for type 1 PSEs.

*SuggestedRemedy*

add sentence:

PSEs can be compatible with 10BASE-T, 100BASE-TX and/or 1000BASE-T. PSEs may support either Alternative A or Alternative B, or both. Type 1 PSEs shall not operate both Alternative A and Alternative B on the same link segment simultaneously.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE. frs: The text does exist on p32.

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Cl 33 SC 33.3.5.1 P 63 L 45 # 43  
 Patoka, Martin Texas Instruments

Comment Type **TR** Comment Status **D** ez class pd

Table 33-14

Icable went to 600mA from 720mA & 29.5W is no longer correct for Class 4.

*SuggestedRemedy*

I suggest that the limit be changed to: Icable \* Vportmin (see table 33-17)

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change class 4 from 29.5W to:

Icable \* Vportmin (see 33.1.4 and table 33-17)

Cl 33 SC 33.3.7 P 66 L 16 # 44  
 Patoka, Martin Texas Instruments

Comment Type **TR** Comment Status **D** Table 33-17

With Icable changing, the PD port volatges have changed from the present values.

*SuggestedRemedy*

Item 1: Type 2 Vport min = 50 - (.6\*12.5) = 42.5V

Item 3: Input V during Overload Voverload = 50 - (.6 \* 400/350 \* 12.5) = 41.4V

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comments 65, 421

Cl 33 SC 33.3.7.3 P 68 L 7 # 45  
 Patoka, Martin Texas Instruments

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

The inrush requirement for sec a type 2 PD have an intentional startup delay of 75ms - even when starting from a type 2 PSE. This causes an unnecessary burden on the type 2 PD due to control of both the minimum and maximum startup times driving cost and complexity up.

"Type 2 PDs with pse\_power\_type state variable set to 2 prior to power-on shall behave like a Type 1 PD for at least TInrush max."

From .af: 33.3.5.3 Input inrush current  
 Input inrush current at startup will be limited by the PSE if CPort < 180uF, as specified in Table 33.5. If CPort >180uF, input inrush current shall be limited by the PD so that IInrush max is satisfied.

This seems to cover up an "oops" in .af since the PD was required to have an inrush less than 0.4A anyway.

*SuggestedRemedy*

Change the text to read:

"Type 2 PDs shall limit their inrush current to IInrush."

A type 1 PD shall have internal inrush current limiting below IInrush max, if CPort > 180 uF. Type 1 internal inrush limiting is not required if CPort < 180 uF, because PSE inrush limiting will provide the necessary limiting."

The inrush limit is in-place to avoid having the type 2 PSE provide a scaled-up inrush limiting, resulting in higher limiting device stress and therefore cost. Type 2 PDs are all ready require to have more sophisticated control due to 2-event classification, and virtually all integrated PC front-end solutions have some form of inrush limiting. Requiring the type 2 PD to limit its own inrush will have no cost impact to the market.

Given that the PSE will always know that it is powering a type 2 PD, it may safely skip the inrush period, or curtail its length. The PSE will still be protected from a non-compliant PD by clause 33.2.9.1 - just as it would be for a shorted cable while powering a PD. The PSE must handle this case and there is no additional cost to the PSE.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change the text to read:

"Type 2 PDs shall limit their inrush current to IInrush or below."

IEEE P802.3at D3.0 PoEplus comments

A type 1 PD shall have internal inrush current limiting below  $I_{inrush\ max}$ , if  $C_{Port} > 180\ \mu F$ . Type 1 internal inrush limiting is not required if  $C_{Port} < 180\ \mu F$ , because PSE inrush limiting will provide the necessary limiting."

Change Table 33-9 item 6:

Break into three rows:

MIN	MAX	PSE	Additional info
0.4	0.45	1	See33.2.9.6
0.4	0.45	2, type 1 PD	See33.2.9.6
		Il <sub>lim</sub> 2, type 2 PD	See33.2.9.6

**CI 33**      **SC 33.3.7.6**      **P 69**      **L 48**      # 46  
 Patoka, Martin      Texas Instruments

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

This is primarily a carry-over from .af where the PSE will limit current. However, transient response is now covered by 33.3.7.5.

From .af:

"While there is no max capacitance, the PD max input capacitance ( $C_{Port}$  in Table 33-12) and the PD input circuitry shall be designed in such a way that when a PD is connected to a PSE through a series resistance of up to 20 Ohms and the PSE voltage is changed from 44V to 57V, the peak current  $I_{Port}$  will be as specified in Table 33-12, item 4, for a maximum duration of 50ms. Input capacitance of 180uF or less requires no special input considerations."

*SuggestedRemedy*

- 1) Drop 33.3.7.6 or:
- 2) Change 33.3.7.6 to read:

"... PD is connected to a PSE through a series resistance of  $R_{Ch}$  and the PSE voltage is changed from  $V_{Port\ min}$  to  $V_{Port\ max}$  as defined in Table 33-9,  $P_{port}$  may be exceeded for n more than 50 ms. Input capacitance of 180 uF or less requires no special input considerations."

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

PROPOSED ACCEPT.

See Comment 318

**CI 33**      **SC 33.2.7.2**      **P 44**      **L 11**      # 47  
 Anslow, Peter      Nortel Networks

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

The behaviour of the PSE for parallel signature capacitance between  $C_{good\ max}$  and  $C_{bad\ n}$  is not defined

*SuggestedRemedy*

Add "A PSE may accept or reject a parallel signature capacitance in the band between  $C_{good\ max}$  and  $C_{bad\ min}$ ."

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

PROPOSED ACCEPT.  
 frs: The region between must-detect and must-reject should be undefined.

**CI 01**      **SC 01.1.4**      **P 13**      **L 18**      # 48  
 Anslow, Peter      Nortel Networks

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

"1000BASE-T midspan PSE" is defined as "A midspan that will result in a link that can support 10BASE-T, 100BASE-TX, and 1000BASE-T operation."

What is a "midspan"? This definition is different from that in 32.2.2

*SuggestedRemedy*

Change to be the same as the definition in 32.2.2 making the definition: "A midspan PSE that will result in a link that can support 10BASE-T, 100BASE-TX, and 1000BASE-T operation."

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

PROPOSED ACCEPT.

See 49,365

**CI 01**      **SC 01.1.4**      **P 13**      **L 21**      # 49  
 Anslow, Peter      Nortel Networks

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

"10BASE-T/100BASE-TX midspan PSE" is defined as "A midspan that will result in a link that can only support 10BASE-T and 100BASE-TX operation."

What is a "midspan"? This definition is different from that in 32.2.2

*SuggestedRemedy*

Change to be the same as the definition in 32.2.2 making the definition: "A midspan PSE that will result in a link that can only support 10BASE-T and 100BASE-TX operation."

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

PROPOSED ACCEPT.

See 48, 365

IEEE P802.3at D3.0 PoEplus comments

Cl 01 SC 01.1.4 P13 L 28 # 50  
 Anslow, Peter Nortel Networks

Comment Type E Comment Status D  
 There are definitions for "Type 1" and "Type 2"  
 When inserted in to 802.3 these definitions will appear next to  
 "Type: A 2 octet value that indicates the nature of the MAC client protocol. Type values are  
 assigned by the IEEE Registration Authority. (See: IEEE 802.3, 3.2.6.)" which will be confusin

SuggestedRemedy  
 Change these to "PSE or PD Type x" to become:  
  
 1.4.x PSE or PD type 1: A PSE or PD that is designed for IEEE Std 802.3T-2005 power levels  
 1.4.x PSE or PD type 2: A PSE or PD that is designed for greater than IEEE Std 802.3T-2005  
 power levels.

Proposed Response Response Status W  
 PROPOSED ACCEPT.  
  
 Does this mean we have to change all the occurances in the text from Type x to PSE Type x  
 and PD Type x?  
  
 See 108

Cl 33 SC 33.1.1 P23 L 52 # 51  
 Anslow, Peter Nortel Networks

Comment Type E Comment Status D cable  
 Currently says "Type 2 operation over other cabling systems is beyond the scope of the  
 clause." for consistency with previous text, this should be "this clause"

SuggestedRemedy  
 change text to "Type 2 operation over other cabling systems is beyond the scope of this claus

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
  
 511 (OBE)

Cl 33 SC 33.1.4.2 P26 L 10 # 52  
 Anslow, Peter Nortel Networks

Comment Type E Comment Status D cable  
 PoE is not in the list of abbreviations

SuggestedRemedy  
 Add PoE to the list of abbreviations  
  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
  
 OBE 514, 507

Cl 33 SC 33.2.9.9 P51 L 33 # 53  
 Anslow, Peter Nortel Networks

Comment Type E Comment Status D  
 In equations 33-2 and 33-3 there are no units for the times t.

SuggestedRemedy  
 change 10x10<sup>-6</sup> to 10 us, 8.2x10<sup>-3</sup> to 8.2 ms and 10x10<sup>-3</sup> to 10 ms

Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 frs:

Cl 33 SC 33.3.7.4 P68 L 16 # 54  
 Anslow, Peter Nortel Networks

Comment Type E Comment Status D Pport typo  
 This subclause starts:  
 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.  
 It doesn't make sense to say that the peak current shall not exceed a power.

SuggestedRemedy  
 Change to:  
 At any static voltage at the PI, and any PD operating condition, the peak current shall not cau:  
 PPort max to be exceeded for more than 50 ms maximum and 5% duty cycle maximum.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
  
 See comment 417

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.4.8.2 P 81 L 18 # 55  
 Anslow, Peter Nortel Networks  
 Comment Type E Comment Status D  
 This clause starts:  
 When an Alternative A Midspan is connected to a 100BASE-TX PHY, the Midspan transfer function gain shall be greater than ...  
 What is a "midspan"?  
 SuggestedRemedy  
 Change to:  
 When an Alternative A Midspan PSE is connected to a 100BASE-TX PHY, the Midspan transfer function gain shall be greater than ...  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 33 SC 33.3.7 P 66 L 22 # 56  
 Darshan, Yair Microsemi Corporation  
 Comment Type E Comment Status D Table 33-17  
 Type 2 PD input voltage during overload need to be updated according to  $I_{port}=600mA \cdot 0.4/0$ .  
 New value is  $50V-Rch \cdot I_{cable} \cdot 0.4/0.35=41.4V$   
 SuggestedRemedy  
 Replace 39.7 with:  
 Option 1: 41.4  
 Option 2:  $50V-Rch \cdot I_{cable} \cdot 0.2/0.35$   
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE. Comment Type blank, set to E as default.  
 See comment 421

CI 33 SC 33.2.9.9 P 51 L 42 # 57  
 Darshan, Yair Microsemi Corporation  
 Comment Type E Comment Status D  
 Draft D3.0:  
 The PSE is sourcing power not the PI.  
 SuggestedRemedy  
 Change PI to PSE.  
 Same update needed in page 52 line 45.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 frs: A PSE PI provides the power.  
 I do not see a problem with either term.

CI 33 SC 33.3.5.2 P 64 L 14 # 58  
 Darshan, Yair Microsemi Corporation  
 Comment Type E Comment Status D ez class pd  
 Draft D3.0:  
 Typo. Should be PD and not IPD  
 SuggestedRemedy  
 Delete I  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See 154

CI 33 SC 33.2.8 P 44 L 25 # 59  
 Darshan, Yair Microsemi Corporation  
 Comment Type ER Comment Status D class pse  
 Draft D3.0  
 Interrogation is not defined in the standard however detection does.  
 SuggestedRemedy  
 Replace Interrogation with detection  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 See comment 174.

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.2.9 P 49 L 7 # 60  
 Darshan, Yair Microsemi Corporation

Comment Type T Comment Status D

SuggestedRemedy

Proposed Response Response Status W

PROPOSED REJECT.  
 frs: empty comment

Cl 33 SC 33.3.7.4 P 68 L 16 # 61  
 Darshan, Yair Microsemi Corporation

Comment Type T Comment Status D Pport typo

Draft D3.0:  
 we change peak current to peak power

SuggestedRemedy

Change peak current to peak power

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See comment 417

Cl 33 SC 33.3.7.9 P 70 L 21 # 62  
 Darshan, Yair Microsemi Corporation

Comment Type T Comment Status D informative note

Draft D3.0:  
 The word "informative" is redundant.  
 The whole 33D etc. is informative.

SuggestedRemedy

Remove "informative" and scan the text for multiple locations

Proposed Response Response Status W

PROPOSED REJECT.

The normative vs. informative distinction might not be clear to many readers.

Cl 33 SC 33.3.8.1 P 70 L 48 # 63  
 Darshan, Yair Microsemi Corporation

Comment Type T Comment Status D MPS

Draft D3.0:  
 The title "input current" is no longer match the text.

SuggestedRemedy

Replace "Input Current" with "PD Maintain Power Signature"

Proposed Response Response Status W

PROPOSED REJECT.

OBE See 236. Heading is being removed. Redundant to 100

Cl 33 SC 33.4.8.2 P 81 L 23 # 64  
 Darshan, Yair Microsemi Corporation

Comment Type T Comment Status D

Draft D3.0  
 There is some confusion in the text regarding DC bias current and I<sub>unb</sub> in page 81 line 29.  
 The dc bias current is the net result of DC bias current caused by the data, I<sub>bias1</sub> and the DC bias current caused by I<sub>unb</sub>, I<sub>bias2</sub>=I<sub>unb</sub>/2 so DC bias current=I<sub>bias1</sub>+I<sub>bias2</sub>. According to draft 3 and 802.3 requirements the max DC bias is 8mA+ 0.5 X 0.03 X 600mA = 17mA .

SuggestedRemedy

1. Change line 29 from:  
 "Additionally, the requirements will be met with a DC bias current between 0 mA and I<sub>unb</sub> mA (see Table 33-9)."  
 To:  
 "Additionally, the requirements will be met with a DC bias current between 0 mA and (8+0.5\*I<sub>unb</sub>)mA (see Table 33-9 for I<sub>unb</sub>)."

2. Add figure 33-24-1 after line 36 to complete information.  
 Editor to use the right text to make this drawing part of compliance test as described in lines 32-36.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

frs: This should be discussed.

Figure 33-24 exists and could be pointed to from section 33.4.8.2.

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.3.7 P 66 L 15 # 65  
 Darshan, Yair Microsemi Corporation

Comment Type T Comment Status D Table 33-17

Type 2 PD input voltage need to be updated according to  $I_{cable}=600mA$   
 New value is  $50V-12.5OHM*0.6A=42.5V$   
 or  $50V-I_{cable}*R_{ch}*0.5$

SuggestedRemedy

Replace 41 with:  
 Option 1: 42.5  
 Option 2:  $50V-I_{cable}*R_{ch}*0.5$

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Table 33-17, Item 1, PSE type 2, change minimum entry to:

$V_{port\_min}(PSE) - (I_{cable} * R_{ch}/2)$

Add note to Additional information:  
 "See Table 33-1"

CI 33 SC 33.12.1.1.4 P 17 L 40 # 66  
 Darshan, Yair Microsemi Corporation

Comment Type T Comment Status X

"priority unknown or PSE" are tied to a single value.  
 It will be usefull to split it to two seperate values.

SuggestedRemedy

Seperate to:  
 - unknown1 priority  
 - Unknown2 PSE

Proposed Response Response Status W

This is Clause 30, not 33.

Defer to Wael.

CI 33 SC 33.2.4.4 P 34 L 46 # 67  
 Darshan, Yair Microsemi Corporation

Comment Type T Comment Status D

We need to synchronize between the text in "option\_detect\_ted" variable and the additional information for item 25 table 33-9, error dedal tyding.

Rational:

The purpose of Ted is to preven from consecutive startup to happen in a duty cycle that can cause heating issues.

Therefore we specified minimum time between startups of 750msec.

It is also the minimum time between consecutive detection attempts after fault.

The text in these two locations are a bit different but the end result is the same.

SuggestedRemedy

Change the text from:

"This variable indicates if detection can be performed by the PSE during the ted\_timer interval

to :

"This variable indicates if detection or consecutive startups (per Table 33-9 items 6 and 7) car be performed by the PSE during the ted\_timer interval."

Proposed Response Response Status W

PROPOSED REJECT. frs:

This variable was created during a maintance request to permit detection and classification bu delaying power-on until Ted expires. This limits power dissipated of the pass element.

It does not permit the PSE to optionally startup (power-on).

"This variable indicates if detection or consecutive startups (per Table 33-9 items 6 and 7) car be performed by the PSE during the ted\_timer interval."

CI 33 SC 33.2.9.9 P 52 L 52 # 68  
 Darshan, Yair Microsemi Corporation

Comment Type T Comment Status D

Delete the text "See figure 33C.4 and Figure 33C.6" they are not relevant in this clause after creating figure 33-14.

SuggestedRemedy

Delete the text "See figure 33C.4 and Figure 33C.6"

Proposed Response Response Status W

PROPOSED ACCEPT.

frs:

## IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.1.4 P 25 L 41 # 69  
 Darshan, Yair Microsemi Corporation

Comment Type T Comment Status D

We are using "mA" units in Table 33-9 and other locations so it is better to use mA in Table 3:1 as well to prevent confusion.

*SuggestedRemedy*

Change Units to mA and change numbers to 350 and 600.

Proposed Response Response Status W

PROPOSED REJECT.

Readers understand the relationship between A and mA.

355

CI 33 SC 33.2.4.4 P 34 L 4 # 70  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status D

Draft 3.0:

We had allowed the PSE to turn power to OFF if Vport is out of operating range per 33.2.9.1.

Therefore the state diagram in figures 33-9 should reflect it as well.

The way to do it is to create new variable which will be optional.

When the conditions of this variable are met, the PSE will remove power at any  $t < TLIM\_MIN$ .

*SuggestedRemedy*

Remedy steps:

1) Add new variable option\_vport\_lim to 33.2.4.4. It will be an optional variable:

"option\_vport\_lim

This variable is indicating If PSE port voltage is out of operating range during normal operation mode.

Values:

False: Vport is within the Vport normal operating range as defined by table 33-9.

True: Vport is above or below normal Vport operating range as defined by table 33-9."

2) Change state diagram (figure 33-9 per the attached drawing by changing the inputs to ERROR\_DELAY\_SHORT state coming from POWER\_ON state, from:

tlim\_timer\_done

to:

Tlim\_timer\_done + !tlim\_timer\_done\*option\_vport\_lim\*power\_applied )

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

Proposed Response Response Status W

PROPOSED ACCEPT.

frs: This modification ensures the requirements on p51, L24.



IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.3.5 P 63 L 6 # 71  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status D class pd

Draft D3.0:  
 According to the:  
 1. Classification base line concept and  
 2. Associated motions and  
 3. Current text in 802.3 that define that the physical layer classification information is the maximum power that the PD will ever need.  
 the text should explicitly note that a PD that asks more power than advertised in L1 hardware classification is specifically not compliant.

The rational for this was to prevent interoperability issues such as when a PD that advertized through its Layer 1 classification that it needs e.g. 12.95W and through L2 requires more power then 12.95W. In this scenario when it is connected to PSE that equipped with L2 the PD will fully work and when connected to a PSE that doesnt equipped with L2 it may or will not w  
 As a result we mandate PD type 2 to support both L1 and L2 classification and specify that hardware classification results are max. Power values.

*SuggestedRemedy*

1) Add the following text right after line 19:  
 "PD that asks more power by using Data Link Layer classification than advertised in its physic layer classification is not compliant to this standard".

Other equivalent wording is welcomed.  
 2) In addition add to 33.7.6.2 page 94 ,line 18 the following text.  
 "The "NEW\_VALUE" shall not be higher then specified in mr\_pd\_class\_detected variable.

*Proposed Response* Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Equivalent statement already exists for 1-event class (p63L23). Equal statement doesn't exis for 2-event. Place statement to cover both class methods.

Remove p63L23

Append following text to the end of 33.3.5:

The power level advertised via physical-layer classification is the maximum power the PD shal draw under all permissiable input voltages and operational modes.

CI 33 SC 33.2.3 P 32 L 50 # 72  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status X 4P

Draft 3.0  
 The standard should not preclude implementations that are using both alternative A and B du to the following reasons:  
 a) It is out of scope of the standard to limit implementations that meets standard requirements  
 b) There are no interoperability issues if PD gets power from 2x 2 pairs power source especia if all pairs are comming from the same port/segment/PSE type 2. It is the load responsibility (PD) to meet the 2P specification for each 2P. Implementation methods are out of scope of th standard.  
 c) It is economically and technically feasible as shown in numerous presentations and current products at the market, however these criteria's is not required for allowing 2x2P operation du to the fact that there are other alternatives allowed by the standard and the vendor has choice  
 e) There are products in the market that already are using the 2 x 2P implementation.  
 f) There is huge market for higher power then 30W over 2P.  
 g) There is no additional cost issue. The \$/watt cost is even lower then in 2P system as showi in previous meeting presentations.  
 h) For outdoor applications, temperature rise issues of the cables when using 60degC cabling system grade can be solved if the same power is delivered over 2 x 2P which is an easy solution for thermal issues.  
 i) Users will do it any way to utilize the full capability of the existing infrastructure.  
 J) In previous meeting switch and PHY vendors wanted the ability to use the same cable whic consists of 4 pairs to support two PDs that each one of them is connected to a 2P system. Th current text precludes using this feature.

*SuggestedRemedy*

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

To:  
 "A PSE shall implement Alternative A or Alternative B, or both, provided the PSE meets the constraints of 33.2.3. Implementers are free to implement either alternative or both.  
 Note: Configurations in which simultaneous operation of ALT A and ALT B are achived when ALT A and ALT B are coming from different PI segments are specifically not allowed by this standard".

In addition, in 33.3.1 page 33 line 42 modify the text to be:  
 "NOTE-PDs that implement only Mode A or Mode B are specifically not allowed by this standard. PDs that may simultaneously receive power from both Mode A and Mode B are out scope of this standard."

*Proposed Response* Response Status W

frs: This needs to be discussed in the task force.

## IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.2.9.6 P 50 L 50 # 73  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status D

Draft 3.0, Figure 33C.4

In many occasions the normative text send the reader to see figures 33C.4  
 These drawings should be at the normative text as it was in early drafts of 802.3af and were  
 moved to the informative section due to editing considerations. Please find attached updated  
 33C.4 that integrates all changes made up to Draft D3.0.

The updaes made to 33C.4 are:

1. It is describing the current during startup (inrush) only and not short circuit condition. Short circuit condition is well defined by figure 33-14.
2. It include the equations need to describe the behaviour in order to make it normative.
3. It fixes some of inaccuracies found between t=0 to t=2msec.

*SuggestedRemedy*

1. Replace figure 33C.4 with the attached updates.
2. Move 33C.4 to the normative text to be located in 33.2.9.6.
3. Scan the draft and delete the text refering 33C.4 in other locations that is not inrush or startup state/mode.
4. In locations that figure 33C.4 were used to describe short circuit behaviour, replace it with figure 33-14.

Proposed Response Response Status W

PROPOSED REJECT.

frs: Figure 33-14 captures the allowance provided by 33C.4 and corrects errors made in 33C

I can not see the attachements.

CI 33 SC 33.3.1 P 57 L 41 # 74  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status D

25W 4 pair

Draft D3.0:

The note in line 41 precludes the ability to reduce power loss over the cable and increase overall system efficiency.

Rational:

Using a Type 2 PD that requires a total of 24W (example) on a 2P can also take a toatal of 24W over all 4 pairs with simple PD implementation.

In this case this PD can work on 2P PSE or on 2x2P PSEs with the same PD behaviour which is transparent to the user.

In addition let's assume that in this case both pairs are comming from the same box and the same power supply. This is a classical case in which by using all pairs we effectively reduce the channel power loss and allows interoperable and reliable operation.

*SuggestedRemedy*

Change from:

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

to:

"NOTE-PDs that implement only Mode A or Mode B are specifically not allowed by this standard. PDs that simultaneously may recieve power from both Mode A and Mode B is out o scope of the standard"

Proposed Response Response Status W

PROPOSED REJECT.

The comment demonstrates a concern over the case where there is a PD that can work as either 24W 2 pair or 24W 4 pair (2x 2 pair, total of 24W). The exisiting text does not specifically preclude either solution because the the PD does not REQUIRE power from both pairs, it can work on either pair set (Mode A or B). There is no problem to be fixed. A PD built as suggest would represent a superset of the required functionality.

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.2.4 P 33 L 3 # 75  
 Darshan, Yair Microsemi Corporation

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

Draft 3.0:  
 The text that was deleted from previous drafts is correct and helpful.

*SuggestedRemedy*

Add after line 3:  
 "Equivalent implementations that present the same external behaviour are allowed"

Proposed Response Response Status **W**

PROPOSED REJECT. frs: The state diagrams show what is required for external behavior an not the required implementation.

The text does not change the specification but adds unnecessary text. This was removed previously after a similar discussion.

CI 33 SC 33.2.4.7 P 41 L 13 # 76  
 Darshan, Yair Microsemi Corporation

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

Draft D3:  
 1. Figur 33-11 specifying the behavior of startup mode in addition to overload, short and MPS  
 2. The behavior of short and startup are different in many aspects while it was similar in terms of ILIM and TLIM for type 1 legacy PSE.  
 Now we have to separate the state diagram to reflect current changes in type 1 and type 2 PS  
 We already specified Tinrush, linrush for startup and ILIM/TLIM for short circuit.  
 I believe that this differentiation will help to make clearer standards.

*SuggestedRemedy*

Steps:  
 1. Replace figure 33-11 with the attached modification.  
 Changes are: Startup and short circuit behavior has separate drawing and the same behav of the old drawing.  
 1.1 Add to 33.2.4.5:  
 "tinrush\_timer  
 A timer used to monitor the duration of the inrush current condition during startup, See Tinrush in Table 33-9."

(Table 33-9 was already updated in previous drafts)

Proposed Response Response Status **W**

frs: attachement not available.

CI 33 SC 33.2.8.2 P 46 L 48 # 77  
 Darshan, Yair Microsemi Corporation

Comment Type **TR** Comment Status **D** class pd

Draft 3.0:  
 Add clarification that Data Link Layer takes precedence over physical layer classification only when system requires using lower power than advertised by the physical layer classification.

*SuggestedRemedy*

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

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

Proposed Response Response Status **W**

PROPOSED ACCEPT.

Update text as follows:  
 "NOTE-Data Link Layer classification takes precedence over Physical Layer classification whi system requires lower power than advertised by the Physical Layer classification."

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.3.1 P57 L41 # 78  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status D 25W 4 pair

Draft D3.0  
 The standard allow using for each pair up to I<sub>cable</sub>.  
 This Note prevents using all 4 pairs in a way that the total current will be I<sub>cable</sub>.  
 The end result if using a total of I<sub>cable</sub> for all 4 pairs would be less power on the cables, less power consumption on PSE resulting with higher then 80% system efficiency.  
 If I<sub>cable</sub> meet the specification of 2P then I<I<sub>cable</sub> certainly meets the same specification so preventing feeding the current all over the 4 pairs doesnt make sense.

This is implementation that is inline with the global effort for reducing power loss and in my opinion we are not authorized to preclude implementations that meet the numbers and state machines of this standard.

*SuggestedRemedy*

- Option 1:  
Delete:  
"PDs that simultaneously require power from both Mode A and Mode B are specifically not allowed by this standard."
- Option 2:  
Change to: "PDs that simultaneously recive power from both Mode A and Mode B are out of scope of the standard."
- Option 3:  
Change to:"PDs that simultaneously recive power from both Mode A and Mode B are specifically required to meet the requirements of this standard for each Mode A and Mode B independently."
- Option 4:  
"PDs that simultaneously receive power from both Mode A and Mode B and the sources of Mode A and Mode B are comming from different system segments are specifically not allowe by this standard."

Proposed Response Response Status W

PROPOSED REJECT.  
 This note does not prevent using all 4 pairs in the manner proposed. It merely states that the PD must not REQUIRE on both mode A and mode B.  
 Commentary only: Other sections of the standard may preclude these implementations, and interoperability is dubious at best.

CI 33 SC 33.2.4.7 P39 L38 # 79  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status X

Draft D3.0:  
 PD may request from PSE lower power through L2 than was adverstised by its hardware classification i.e. if PD is Type 1 PD with class 3, after powerup it can request less power by using L2 but it can't ask more then class 3 and convert to Type 2...this is not interoperable behaviour (we already agree to this fact).  
 If PD is type 2 which must be class 4, it can request lower power after powerup by using L2 and it can't ask for more then class 4 through L2.  
 These requirement ensures interoperability between PDs and PSE with or without L2.  
 This was our baseline and the results of all our discussions.

In many locations in Draft D3.0 the editing work generate the impression that all the above ma be violated by bad interpretation of the current text.

Due to the fact that the state diagram determines the behaviour and not the text we need to fi: the state diagram accordingly and align the text to it.

*SuggestedRemedy*

1. Figure 33-9: add input to the "POWER\_DENIDE" state which is true when the requested power from the PD through L2 is higher then mr\_pd\_class power equivavlent. (equivalent solution is good too)
2. Add to 33.7 page 89 after line 10 the following text: "Type 1 PD that request more then 12.95W through data link layer classification is specifically not compliant to this standard"
3. Use the same conceptual restrictins (of step 1) in 33.7 figures 33-28 and 33-27.

Proposed Response Response Status W

frs: This needs to be discussed by the group.

Classification is optional for a Type-1 PSE (Class 0).

Item 2 is already covered by Table 33-5 on p45.

We eagerly awate your solution to Item-3.

1. Figure 33-9: add an input to the "POWER\_DENIED" state which is true when the requestec power from the PD using DLL is higher than mr\_pd\_class power.
3. Use the same conceptual restrictions (of step 1) in 33.7 figures 33-28 and 33-27.

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.2.9.6 P 50 L 46 # 80  
 Darshan, Yair Microsemi Corporation

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

Draft D3.0  
 We differentiated between TLIM and Tinrush.  
 TLIM is for short circuit conditions and Tinrush is for startup.  
 We did it all over the specification.  
 See seperate comment that adress the state machine in this regard.

*SuggestedRemedy*

Replace TLIM with "Tinrush as specified in Table 33-9".

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.  
 frs:  
 Replace TLIM in 33.2.9.6 item-c with Tinrush.

CI 33 SC 33.2.9.9 P 52 L 28 # 81  
 Darshan, Yair Microsemi Corporation

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

Figure 33-14  
 Draft D3.0:  
 Figure 33-14 defines also TLIM in addition to Tovld

*SuggestedRemedy*

Change Tovld min to Tovld min/TLIM min  
 Change Tovld max to Tovld max/TLIM max  
 Add text to 33.2.9.9: PSE may remove power at any time between the PD upper bound templ  
 and the PSE upper bound template

Proposed Response Response Status **W**

frs: This is related to 329, and 441. The solution to these probably covers what is required he  
 Changing a time value to a constant on a time scale does not make sense.

CI 33 SC 33.2.9.12 P 53 L 22 # 82  
 Darshan, Yair Microsemi Corporation

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

Draft D3.0:

The text is confusing.  
 In 33.28 the relevant data is Table 33-6.  
 In 33.7 Pclass value may be updated by Data Link Layer Classification.  
 Pclass value must be the minimum value between these two.  
 As a result, Type 1 PD that advertises L1 Class 3 Can not request more power and became  
 Type 2 PD! It is not interoperable with PSEs that uses only L1.  
 Type 2, PD may require lower power then class 4 and this is interoperable behavior therefore  
 is allowed.

*SuggestedRemedy*

Change from:  
 "Pclass is the class power defined in 33.2.8 (see Table 33-6) or the results of Data Link Layer  
 classification as defined in 33.7."

to;

"For Type 1 PD, Pclass is the maximum value between the class power defined in Table 33-6  
 and the results of Data Link Layer classification as defined in 33.7."

Proposed Response Response Status **W**

PROPOSED REJECT.  
 frs: This is already concisely covered by Table 33-5.

CI 33 SC 33.2.9.13 P 53 L 31 # 83  
 Darshan, Yair Microsemi Corporation

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

Draft D3.0:

The 3% unbalanced current was not based on simulation.  
 It was based on 3% specification of the channel.  
 The simulated unbalanced current was much higher then 3% and we preferred to ignore its  
 value and leave it to the implementer to decide how to handle it.  
 The informative section supplises the basic information for that matter.

*SuggestedRemedy*

Change to: "The values are based on channel output current imbalance of 3% of Icabl as  
 specified in Table 33-9."

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.  
 frs: Related to 192. Both could have the same solution.

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.3.3.5 P 60 L 15 # 84  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status D PD State Machine  
 Draft D3.0.

The PD state diagram is NOT supplying a "Test Mode" as we did in the PSE state diagram. Test mode allows by passing all PD functions that prevent it from powering. In this way we can test PDs in the field if when connected to PSE something is not working ar we want to isolate the problems. We can add a cautionary note as we did in 33.6.1.1.4 for the PD as well with the relevant text

*SuggestedRemedy*

add "PD TEST MODE" state to the PD state diagram.  
 See attached drawing for reference.

Add the following text "Test Mode may be used only for PD tests purposes and not as part of PD normal operation"

Proposed Response Response Status W

PROPOSED REJECT.  
 PD functions do not prevent it from powering, this is controlled by the PSE. A failed PD that does not power from a PSE cannot be reliably bypassed.

CI 33 SC 33.3.7 P 66 L 28 # 85  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status D  
 Draft D3.0:

Item 6:  
 1. We should define a minimum number only. The max. should not be defined due to the fact that it is implementation issue.  
 1.1 5msec as minumum number is suggested. I would like to get more inputs from PD system vendors.  
 2. In most cases there is inherent delay in the application so forcing a number is not critical in this case.

*SuggestedRemedy*

Change 0 to 5msec.  
 Delete value for maximum.

Proposed Response Response Status W

PROPOSED REJECT.

Is is burdensome to force a PD to have a minimum inrush period. The maximum limitation is assure compatibility with a PSE.

CI 33 SC 33.3.7 P 66 L 37 # 86  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status D  
 Draft D3.0:

Our objective for determine Ppeak was that  $P_{peak}=P_{port\_max}*0.4/0.35$ .  
 The current text specifies  $P_{peak} = (0.4/0.35)*(P_{port\_max}/V_{port\_static\_min})*V_{port\_min}$ .  
 Analyzing the above equation shows the following:  
 A)  $P_{port\_max}$  is a constant number determined by item 4 which is  $25.5W=0.6A*42.5V$  which i OK.  
 B)  $V_{port\_static\_min}$  is not defined, hence it is not clear what it is?  
 C)  $V_{port\_min}=42.5V$  (for  $I_{cable}=600mA$ )

I don't see the benefit of using such equation that actually don't supply additional information. It is simpler to define  $P_{peak}=(0.4/0.35)*P_{port\_max}$

*SuggestedRemedy*

Replace:  
 $"(0.4/0.35)*(P_{port\_max}/V_{port\_static\_min})*V_{port\_min}."$

With  $"P_{peak}=(0.4/0.35)*P_{port\_max}"$

Proposed Response Response Status W

PROPOSED ACCEPT.

Table 33-17, item 7, Peak operating power class 4 replace formula with

$P_{peak}=(0.4/0.35)*P_{port\_max}$

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.3.7.5 P 69 L 41 # 87  
 Darshan, Yair Microsemi Corporation  
 Comment Type **TR** Comment Status **D** Dynamic PD V  
 Draft D3.0:  
 Figure 33G.1. is in the informative section and yet the text discuss about compliance model.  
*SuggestedRemedy*  
 Option 1 (Preferred): Move figure 33G.1. to the normative section.  
 Option 2: Delete "compliance models" and replace with "test models"  
*Proposed Response* Response Status **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Move figure 33F.1 to t0 -line 40, P69. Relabel figure #.  
 Change:  
 For PD behavior prior to 10 ms and compliance models, see Figure 33F.1.  
 To:  
 For Type 2 PD behavior prior to 10 ms see Figure 33#. Additional detail is provided in annex  
 See also comment 317 for type 2 reference

CI 33 SC 33.4.8.1 P 80 L 16 # 88  
 Darshan, Yair Microsemi Corporation  
 Comment Type **TR** Comment Status **X**  
 Draft D3.0:  
 Item 3, the 1000BT Midspan can be also divided to items 1 and 2.  
*SuggestedRemedy*  
 Option 1:  
 Split item 3 to:  
 3) 1000BT Connector or telecom outlet Midspan PSE  
 4) 1000BT work area or equipment cable Midspan PSE  
 Option 2: Delete lines 15-19 due to the fact that it is already explained in 33.4.8 page 91 lines 41-54 and 33.4.8.1  
*Proposed Response* Response Status **W**  
 reviewed

CI 33 SC 33.7 P 89 L 9 # 89  
 Darshan, Yair Microsemi Corporation  
 Comment Type **TR** Comment Status **X**  
 Draft D3.0:  
 Type 1 PD that requires more power then 12.95 by using Data Link Layer Classification is specifically not compliant to the standard.  
 It can be understood from the text that we can do it.  
*SuggestedRemedy*  
 Add the following text after line 9:  
 "Type 1 that requires more power then 12.95W by using Data Link Layer Classification is specifically not compliant to the standard."  
*Proposed Response* Response Status **O**

CI 33 SC 33.7.6.5 P 96 L 27 # 90  
 Darshan, Yair Microsemi Corporation  
 Comment Type **TR** Comment Status **X**  
 Draft D3.0:  
 The state diagram as it is in figure 33-27 and 33-28 allows the case of a Type 1 PD that requires more power then 12.95 by using Data Link Layer Classification. This case is not allowed (due to iteroperability issues) and according to the state diagram it is.  
*SuggestedRemedy*  
 Add to the state diagram a state that if the PD is classified as class 0,1,2 and 3 it can reclassi itself to lower class power then advertized by the hardware classification but not to higher clas power.  
*Proposed Response* Response Status **O**

CI 33 SC 33.4.8.2 P 81 L 23 # 91  
 Darshan, Yair Microsemi Corporation  
 Comment Type **TR** Comment Status **X**  
 Draft D3.0  
 Update equation 33-14 to include the results of sensitivity analysis for having the worst case conditions covered.  
*SuggestedRemedy*  
 Updated equation to be delivered by the Midspan adhoc at the meeting  
*Proposed Response* Response Status **W**  
 see 269, same comment

IEEE P802.3at D3.0 PoEplus comments

**Cl 33**    **SC 33.3.3.5**                      **P 60**            **L 15**                      # 92

Darshan, Yair                                      Microsemi Corporation

**Comment Type**    **TR**            **Comment Status**    **D**                      **PD State Diagram**

Draft D3.0.

The PD state diagram is NOT supplying a "PD TEST ERROR" to specify the behaviour in fault conditions.

*SuggestedRemedy*  
 add "PD TEST ERROR" states to the PD state diagram.  
 See attached drawing for reference.

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

PROPOSED REJECT.  
 File not readable

**Cl 33**    **SC 33.2.9.9**                      **P 52**            **L 30**                      # 93

Darshan, Yair                                      Microsemi Corporation

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

1. The title of the drawing 3-14 is not reflecting the full intent of it.  
 2. Equation 33-2 and 33-3 do not reflect the fact that the requirements are applicable only when Vport is within operating range.

*SuggestedRemedy*  
 1. Change title of figure 33-14 from;  
 "Figur 33-14 - PI Operating current templates"  
 to  
 "Figur 33-14 - PI Operating current and timing templates at Static Output Voltage, Vport operating range"  
 2. Add in equation 33-2 and 33-3 " and  $V_{port\_min} \leq V_{port} \leq V_{port\_max}$ " for each part of the equations.

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

PROPOSED REJECT.  
 frs: This diagram is valid for static and dynamic PSE voltages.  
 PSEs only supplies ILIM when the port voltage changes.

**Cl 33**    **SC 33.2.4.6**                      **P 37**            **L 2**                      # 94

Darshan, Yair                                      Microsemi Corporation

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

det\_pd\_type function returns multiple variables i\_lim\_type and i\_lim\_tymr.  
 The values for both variables may be Type 1 or Type 2.  
 We agree to allow Type 2 PSE to use Type 2 Ilim/Ilim curves for Type 1 PD too.  
 This fact is not covered by the function details.

*SuggestedRemedy*  
 Add after line 8:  
 "Type 2 PSE may assign Type 2 value for i\_lim\_type and i\_lim\_tymr regardless of the actual class readings"

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

PROPOSED ACCEPT IN PRINCIPLE. frs:  
 A Type 2 PSE may assign a Type 2 value for i\_lim\_type and i\_lim\_timer independent of the actual class read.

**Cl 33**    **SC 33.2.8**                      **P 44**            **L 54**                      # 95

Darshan, Yair                                      Microsemi Corporation

**Comment Type**    **TR**            **Comment Status**    **D**                      **class pse**

"In previous draft (D2.0, 3.2.8 PAGE 48 LINE 35) we had the text that allow PSE to remove power to a PD that violates the max. power required for its advertized class."

*SuggestedRemedy*  
 Restore the text:  
 "A PSE may remove power to a PD that violates the maximum power required for its advertize class"

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

PROPOSED REJECT.

That test was not in draft 2.0 or 1.0.

Draft 1.0 shows that text crossed out. (Referencing the draft with edits shown, page 36, line 5)

However, D3.0 does have the same intent in two places:

p51, L5: If IPort in Table 33-9 exceeds ICUT for longer than Tovld, the PSE may remove power from the PI.

P51L19: After time duration of Tovld as specified in Table 33-9, the PSE may remove power from the PI.



IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.2.9 P 48 L 50 # 96  
 Darshan, Yair Microsemi Corporation

Comment Type **TR** Comment Status **D**  
 In Table 33-9 item 13, the additional information "See 33.1.4.2" is not the correct reference.

*SuggestedRemedy*  
 Replace "See 33.1.4.2" with "See 33.1.4"

*Proposed Response* Response Status **W**  
 PROPOSED ACCEPT.  
 frs: same as 213

CI 33 SC 33.2.9.6 P 50 L 50 # 97  
 Darshan, Yair Microsemi Corporation

Comment Type **TR** Comment Status **D**  
 Draft 3.0, Figure 33C.6

Figure 33C.6 that was in the informative section need to be deleted.  
 In order to cover some of the maintainance requests, we need to add some normative text as additional information.  
 The issues are:  
 1. During overload per 33.2.9.7 the PSE is required to stay in normal voltage operating range defined by Table 33-9 item 1.  
 2. During short circuit condition specifically when the port is current limited, The port voltage may be lower then Vport\_min.

*SuggestedRemedy*  
 1. Delete Figure 33C.6  
 2. Delete "Figure 33C.6" from 33.2.9.6 item f.  
 3. Add the following text after item f: "During startup Vport may be lower then Vport\_min when the port is within Tinrush range"  
 4. Delete "Figure 33C.6" from 33.2.9.7 line 6 and from 33.2.9.8 line 19.  
 5. Add the following text at the end of 33.2.9.7: "If Iport<Icut, Vport shall be as specified in Table 33-9 item 1. If Iport>Icut for t>=Tcut, Vport may be lower then Vport\_min."

*Proposed Response* Response Status **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 frs: This is related to 39, 225.  
 Solution items 1, 2, and 4 are ok.  
 Solution item-3 is not required because f already specifies the operating voltage.  
 Solution item-5 is covered by Figure 33-14.

1. Delete Figure 33C.6  
 2. Delete "Figure 33C.6" from 33.2.9.6 item f.  
 3. Add the following text after item f: "During startup Vport may be lower than Vport\_min when the port is within Tinrush range"  
 4. Delete "Figure 33C.6" from 33.2.9.7 line 6 and from 33.2.9.8 line 19.  
 5. Add the following text at the end of 33.2.9.7: "If Iport<Icut, Vport shall be as specified in Table 33-9 item 1. If Iport>Icut for t>=Tcut, Vport may be lower then Vport\_min."

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.2.9.9 P51 L 28 # 98  
 Darshan, Yair Microsemi Corporation

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

It is true that the PSE and not the PD, is responsible for limiting the current during transient lasting less then 10msec however it is important to add text to clarify that this transient is caused by PSE dv/dt.

*SuggestedRemedy*

Change the text from :  
 "NOTE - The PSE, and not the PD, is responsible for limiting current during transient lasting less then 10msec"

With  
 "NOTE - The PSE, and not the PD, is responsible for limiting current during PSE voltage transients lasting less then 10msec."

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.  
 frs: See 319.

The commentor did not complete their input, The solution matches the original text.

Explaing why ILIM is required for a normally functioning would aid readers in the understandir of ILIM's purpose.

CI 33 SC 33.3.7.5 P69 L 36 # 99  
 Darshan, Yair Microsemi Corporation

Comment Type **TR** Comment Status **D** Dynamic PD V

We need to clarify that the transient condition is generated by the PSE.

*SuggestedRemedy*

Change text from "transient conditions..."  
 To "transient conditions generated by the PSE..."

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI 33 SC 33.3.8.1 P70 L 48 # 100  
 Darshan, Yair Microsemi Corporation

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

The title "Input Current" is no longer relevant.

*SuggestedRemedy*

Change title to "PD Maintaing power Signature"

Proposed Response Response Status **W**

PROPOSED REJECT.

OBE See 236. Heading is being removed.

CI 33 SC 33.5.8 P83 L 9 # 101  
 Cobb, Terry Commscope

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

Last sentence "Specific requirements". The standard does define temperature derating.

*SuggestedRemedy*

Delete "Specfic requiremets and" then start the sentence.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI 33 SC 33.1.4.2 P26 L 6 # 102  
 Cobb, Terry Commscope

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

Derating of the cable is not necessary for cables that are not bundled together.

*SuggestedRemedy*

Add to the end of the sentence:

when multiply cables that carry power are bundled together.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE 509

see 464.

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.3.3.3 P58 L45 # 103  
 Vladan, Ionel Marius ON Semiconductor  
 Comment Type E Comment Status D ez  
 Definition of TRUE and FALSE values for the variable pd\_dll\_capable are with a small mistake. They should be referring to PD instead of PSE.  
 SuggestedRemedy  
 Change definition for FALSE and TRUE in :  
 FALSE : The PD does not implement Data Link Layer classification  
 TRUE : The PD does implement Data Link Layer Classification  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 33 SC 33.3.5.1 P63 L45 # 104  
 Vladan, Ionel Marius ON Semiconductor  
 Comment Type E Comment Status D ez class pd  
 Since the objective 6 has changed via a passed motion, the tabel 33-14 should be changed accordingly.  
 SuggestedRemedy  
 Change 29.5 W to 24 W in tabel 33-14.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Note, new power level is 25.5W  
 See 43

CI 33 SC 33.2.8.2 P46 L17 # 105  
 Vladan, Ionel Marius ON Semiconductor  
 Comment Type T Comment Status D class pd  
 The text suggests that all measurements of Iclass shall be taken after 6 ms to ignore initial transients, but the minimum class event timing is 6 ms. Since the PD classification time Tclas = 5ms ( see table 33-17 and subclause 33.3.7.8 ) , would be better to recommend taking Iclass measurements after 5 ms.  
 SuggestedRemedy  
 Change "All measurements of Iclass shall be taken after 6 ms to ignore initial transients." in "/>
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

The measurement of Iclass and the termination of the Iclass event are both controlled by the PSE so an astute designer should know to extend the Iclass event as long as the measureme window is active. However, this comment can be implemented using 5.5ms, thereby addressing the potential problem of a poorly designed PSE.  
 Change text to:  
 "All measurements of Iclass shall be taken after 5.5 ms to ignore initial transients."

CI 01 SC 01.3 P13 L11 # 106  
 LANDRY, MATTHEW SILICON LABS  
 Comment Type E Comment Status D ez  
 The ISO/IEC TR NWIP was approved (see liaison from March 2008), so the editor's note does not need to point out that it is up for vote.  
 SuggestedRemedy  
 Strike the first sentence of the editor's note: "The vote on the NWIP for this Technical Report is currently taking place."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

IEEE P802.3at D3.0 PoEplus comments

Cl 01 SC 01.4 P13 L # 107  
 LANDRY, MATTHEW SILICON LABS  
 Comment Type E Comment Status D ez  
 The term "Midspan" should be capitalized.  
 SuggestedRemedy  
 Capitalize occurrences of "Midspan."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 Comment Type blank, set to E as default.

Cl 01 SC 01.4 P13 L27 # 108  
 LANDRY, MATTHEW SILICON LABS  
 Comment Type E Comment Status X  
 The current definitions of "Type 1" and "Type 2" are rather vague and not too helpful. At best, they would encourage the reader to go look up an old, deprecated version of Clause 33 to get an idea of what the terms mean.  
 Tables 33-5 and 33-1 do an admirable job of capturing many of the Type 1/2 behaviors. They should be used as the basis for the definitions.  
 SuggestedRemedy  
 Replace definitions with some semblance of the following:  
 Type 1: A PSE or PD that meets the criteria for Type 1 in Table 33-1 and Table 33-5.  
 Type 2: A PSE or PD that meets the criteria for Type 2 in Table 33-1 and Table 33-5.  
 Proposed Response Response Status W  
 reviewed  
 see 50

Cl 30 SC 30.2.5 P15 L39 # 109  
 LANDRY, MATTHEW SILICON LABS  
 Comment Type E Comment Status X  
 Inadvertent font mismatch in Object Type column.  
 SuggestedRemedy  
 Reformat with Arial font as needed.  
 Proposed Response Response Status O

Cl 30 SC 30.2.5 P15 L20 # 110  
 LANDRY, MATTHEW SILICON LABS  
 Comment Type E Comment Status X  
 Columns should have headings.  
 SuggestedRemedy  
 Add "Object Name," "Object Type," and "Operations Supported" column headings.  
 Proposed Response Response Status O

Cl 30 SC 30.12.1.1.11 P19 L12 # 111  
 LANDRY, MATTHEW SILICON LABS  
 Comment Type E Comment Status X  
 What does it mean to say that, "this counter has a maximum increment rate of 1 count per second at 10Mb/s?" Is this an implication that the counter should increment at a rate proportional to the link throughput?  
 SuggestedRemedy  
 Clarify intent, or strike "at 10Mb/s."  
 Proposed Response Response Status O

Cl 33 SC 33.1.3 P24 L13 # 112  
 LANDRY, MATTHEW SILICON LABS  
 Comment Type E Comment Status D ez  
 The dependent clause, "as a non-data entity" should be followed by a comma.  
 SuggestedRemedy  
 Replace "as a non-data entity it does not ..." with "as a non-data entity, it does not ..."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.1.3 P 24 L 50 # 113  
 LANDRY, MATTHEW SILICON LABS

Comment Type E Comment Status D ez

The words "endpoint" and "midspan" in the Figure 33-2 an Figure 33-3 titles, respectively, are not capitalized.

SuggestedRemedy

Capitalize "endpoint" in the the Figure 33-2 title and "midspan" in the Figure 33-3 title.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 33 SC 33.1.4.2 P 26 L 9 # 114  
 LANDRY, MATTHEW SILICON LABS

Comment Type TR Comment Status X cable

There are several issues with the NOTE:

- 1) The NOTE identifies some parameters which will allow an implementor to create compliant by incompatible PoE systems;
- 2) The NOTE is not even exhaustive in listing parameters relevant to boosting power delivery;
- 3) Except in specific cases, it is generally quite redundant to list "out of scope" items.

The NOTE fails to fulfill its apparent purpose in pointing the reader toward means of achieving higher power delivery. It seems counter to the spirit of a standard to tacitly encourage conformance without performance by enumerating methods. In short, the NOTE is inappropriate.

SuggestedRemedy

Strike the NOTE.

Proposed Response Response Status W

507, 508, 503, 309

CI 33 SC 33.2.4.1 P 33 L 24 # 115  
 LANDRY, MATTHEW SILICON LABS

Comment Type T Comment Status D

The sentence, "a PSE that is performing Alternative B detection shall not resume detection mode until at least one backoff cycle has elapsed," is redundant to the first sentence of the paragraph. Worse, both sentences are normative, but use differing negative construction to stipulate the same behavior ("SHALL back off no less than" and "SHALL NOT resume ... until at least").

SuggestedRemedy

Strike the sentence.

Proposed Response Response Status W

PROPOSED ACCEPT. frs:

After a PSE that is performing detection using Alternative B fails to detect a valid PD detector signature, the PSE shall back off no less than Tdbo as specified in Table 33-9 before attempting another detection. During this backoff, the PSE shall not apply a voltage greater th 2.8Vdc to the PI.

STRIKE: A PSE that is performing Alternative B detection shall not resume detection mode until at least one backoff cycle has elapsed.

CI 33 SC 33.2.4.7 P 39 L 50 # 116  
 LANDRY, MATTHEW SILICON LABS

Comment Type TR Comment Status X

The states ERROR\_DELAY\_SHORT and ERROR\_DELAY\_OVER behave identically and have the same egress. Their ingress conditions are very similar. The state diagram could be simplified.

SuggestedRemedy

Modify state diagram as recommended in attachment "landry\_fig33-9\_v01.pdf"

Proposed Response Response Status W

frs: The attachment is not available to me. Assume that both branches end up in one state th does the same thing.

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.2.4.7 P41 L15 # 117  
 LANDRY, MATTHEW SILICON LABS

Comment Type **E** Comment Status **D**  
 "LIM" and "Inrush" should be subscripts of "I," per the constants defined in 33.2.4.3.

SuggestedRemedy  
 Fix formatting.

Proposed Response Response Status **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 frs: subscript LIM and Inrush for current variables.

Cl 33 SC 33.2.6 P42 L43 # 118  
 LANDRY, MATTHEW SILICON LABS

Comment Type **TR** Comment Status **X**  
 A normative statement requiring equivalence to a couple of schematics is inappropriate for several reasons.

- 1) Electrical characteristics presented by a PD are well specified (see Tables 33-12, 33-13);
- 2) Electrical characteristics measured by PSE are well specified (see Table 33-4);
- 3) One cannot provide Thevenin equivalence to an ideal, unspecified circuit element like a diode;
- 4) The necessity of conforming to the schematics has not been shown;
- 5) These schematics unnecessarily limit implementation.

SuggestedRemedy  
 Make Figures 33-12, 33-13 illustrative. Strike the statement, "the PSE shall exhibit Thevenin equivalence to one of the detection circuits shown ..."

Proposed Response Response Status **W**  
 frs: A Thevenin circuit will not result in a diode. Text on line 37 explains why the diode is required, but does not mandate the its use.

If the diagrams are illustrative the diode is no longer required.

This needs to be discussed.

Cl 33 SC 33.3.7 P66 L23 # 119  
 Beia, Christian STMicroelectronics

Comment Type **ER** Comment Status **D** Table 33-17

Table 33-17  
 The tables should contain only numbers and not the formulae required to calculate them. The content of each cell will be the result of the respective formula, and will be automatically updated if something changes (e.g. Icable). Then the formulae can be added for reference in the text or in an annex.

SuggestedRemedy  
 Separate into 2 rows the PD types, and substitute 12.95W and 24.6W in place of the expression of Pport max.

Proposed Response Response Status **W**  
 PROPOSED REJECT.

Apparently the tool does not contain embedded formula. The consensus of commenters requested the formula in the table, even though it is harder on the reader.

See added note comment 451

Cl 33 SC 33.3.7 P66 L37 # 120  
 Beia, Christian STMicroelectronics

Comment Type **ER** Comment Status **D**  
 Table 33-17  
 The parameter Vport\_static is not defined. Vport is the static input voltage. Transient input voltage is Vtran\_lo.

SuggestedRemedy  
 Change the expression of peak operating power:  
 $(400/350) \times (Pport\_max / Vport\_min) \times Vtran\_min$

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

See comment 86

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.3.7 P 66 L 37 # 121  
 Beia, Christian STMicroelectronics

Comment Type ER Comment Status D Ppeak

Table 33-17  
 It is very difficult for a reader to find out the right number for Ppeak. As suggested for Pport th tables should contain only numbers and not the formulae required to calculate them. The formula can be moved into the text for reference.

SuggestedRemedy

Change the content of the cell Ppeak max with the result of the formula.

Proposed Response Response Status W

PROPOSED REJECT.

The majority of commenters favor the formula approach even though it is harder on the reader

Cl 33 SC 33.2 P 27 L 3 # 122  
 Frazier, Howard Broadcom

Comment Type E Comment Status D

"PSE" is an abbreviation or more properly, an initialism, not an acronym, unless it is pronounced to rhyme with sissy, and I don't think that is the intent.

SuggestedRemedy

Change "acronym" to "abbreviation". Alternatively, change "acronym" to "initialism".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

"acronym" to "abbreviation"

Cl 33 SC 33.8 P 100 L 21 # 123  
 Frazier, Howard Broadcom

Comment Type ER Comment Status X

missing words

SuggestedRemedy

The end of the sentence should read:

"...a PD shall [set the] aLLDPPoEPLocAcknowledge (30.12.1.1.10) attribute in the DTE Power via MDI classification local object class to the enumeration "loss of communications."

Proposed Response Response Status O

Cl 33 SC 33.1.4.1 P 26 L 1 # 124  
 Frazier, Howard Broadcom

Comment Type TR Comment Status D cable

The note that appears at the top of page 26 is redundant. The content of the note is already captured in the normative text that appears in the second sentence of 33.1.4.1.

SuggestedRemedy

Delete the note. Notes are informative, and this note adds nothing to the normative text.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

3, 140, 447,501, 507, 520

Cl 33 SC 33.2 P 27 L 10 # 125  
 Frazier, Howard Broadcom

Comment Type TR Comment Status D

This sentence:

Characteristics, such as the losses due to overvoltage protection circuits, or power supply inefficiencies, after the PI connector are not accounted for in this specification.

makes no sense. 33.1.3 makes it clear that the PI is the demarcation between the PSE (or the PD) and the medium.

SuggestedRemedy

Delete the sentence.

Proposed Response Response Status W

PROPOSED REJECT.

Disagree. It directly follows "A PSE is electrically specified at the point of the physical connection to the cabling." and adds further clarification of what is not included.

This is baseline text.

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.2.3 P 32 L 50 # 126  
 Frazier, Howard Broadcom

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

This sentence:

Implementors are free to implement either alternative or both.

is redundant. The freedom conveyed in this sentence is stated in the preceding sentence, as well as in 33.2.1.

SuggestedRemedy

Delete the sentence.

Proposed Response Response Status **W**

PROPOSED ACCEPT. same response as comment #331.

CI 33 SC 33.2.8 P 44 L 25 # 127  
 Frazier, Howard Broadcom

Comment Type **TR** Comment Status **D** class pse

Where is "mutual identification" defined? What constitutes mutual identification? Does it correspond to a state in a state machine?

SuggestedRemedy

Provide an unambiguous definition of mutual identification

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

Mutual Identification is partially defined on page 44, L 27.

"Mutual identification is the mechanism that allows a Type 2 PD to differentiate Type 1 PSEs from Type 2 PSEs."

Expand this as follows: "Additionally mutual identification allows Type 2 PSEs to differentiate between Type 1 and Type 2 PDs."

CI 33 SC 33.2.10 P 53 L 42 # 128  
 Frazier, Howard Broadcom

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

The text of the second paragraph predates L2 classification, and seems to ignore it. At the very least, there should be a forward pointer to the subclause on L2 classification.

SuggestedRemedy

Add to the end of the second paragraph:  
 See 33.7 for a description of Data Link Layer classification.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI 33 SC 33.8 P 100 L 19 # 129  
 Frazier, Howard Broadcom

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

A delay of "LLDP time to live (TTL) timeout value for the remote system (see IEEE Std 802.1AB-200X, subclause 9.5.4) plus an additional delay of x TTL timeout value for the remote system" would appear to be equal to 3 x TTL timeout value for the remote system, so why not say so?

SuggestedRemedy

Change the sentence to read:  
 "If a loss of management frame communication persists past three times the LLDP time to live (TTL) timeout value for the remote system (see IEEE Std 802.1AB-200X, subclause 9.5.4) a PSE may remove power,..."

Proposed Response Response Status **O**

CI 33 SC 33.8 P 100 L 21 # 130  
 Frazier, Howard Broadcom

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

The statement "a PSE may remove power" contradicts the requirement stated in the preceding paragraph, which says "Upon loss of management frame communication, PSEs and PDs shall remain operational using the last acknowledged classification state."

Removing power because a low-level management protocol isn't operating as quickly as expected is a drastic step.

SuggestedRemedy

Remove the statement "a PSE may remove power".

Proposed Response Response Status **O**



IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.3.2.9 P 48 L 46 # 131  
 Johnson, Peter Sifos Technologies

Comment Type E Comment Status D PD Ilim Tlim

Table 33-9 Items 10 (Ilim) and 11 (Tlim) combined with 33.2.9.9 and Figure 33-14 provide an ambiguous picture of Ilim and Tlim. Issues:

33-9 Item 10 specifies Ilim(MIN) for Type 1 (400mA) and Type 2 PSE's (602 - 686mA depending on Vport). For Ilim(MAX), reference is made to figure 33-14. Figure 33-14 does not clearly show an Ilim(MAX) value - just the PSE upperbound template. Paragraph 33.2.9.9 (PI Upperbound Template) then refers back to Table 33-9 for Ilim.

33-9 Item 11 specifies Tlim(MIN) for Type 1 and Type 2 PSE's (50msec). For Tlim(MAX), reference is made to Figure 33-14. Again, Figure 33-14 makes no mention of Tlim. It makes an inference however that a PD may draw up to Ilim current from a PSE for up to 10msec - this might suggest Tlim(MIN) is 10 msec, not 50msec in Table 33-9. Paragraph 33.2.9.9 (then refers back to Table 33-9 for Tlim.

SuggestedRemedy

Modify Figure 33-14 to more clearly indicate the range for Ilim(MAX) (e.g. PSE upperbound template ?)

Modify Figure 33-14 to describe the range for Tlim better. If Tlim(MIN) is in fact less than 50 msec, modify Table 33-9, Item 11 to reflect this.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. Comment Type empty, set to E as default

Edit Table 33-9 as follows:

Item	Symbol	Min	Max	PSE type	Additional Information
10	Ilim	0.4	0.45	1	Same
		0.4	0.45	2, Type 1 PD	
		Icable* See 400/350	Info	2, Type 2 PD	
11	Tlim	50	75	1	Same
		50	75	2, Type 1 PD	
		0	10	2, Type 2 PD	

See also comment 317 dependency on Tlim

CI 33 SC 33.2.9.9 P 52 L 52 # 132  
 Johnson, Peter Sifos Technologies

Comment Type E Comment Status D

Reference to Figure 33C.4 creates the implication that Tlim(MIN)= 50 msec and Tlim(MAX)= 75 msec and that Ilim has the range 400 to 450 mA.

Reference to Figure 33C.6 is valid for Type 1 or Type 2 inrush, but no longer appear valid for Ilim or Tlim specification.

SuggestedRemedy

Either remove the references or modify the figures to cover new Ilim/Tlim behaviors as well as Type 2 PSE behavior.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. Comment Type empty, set to E as default

frs: see 68.

CI 33 SC 33.2.9 P 48 L 5 # 133  
 Johnson, Peter Sifos Technologies

Comment Type E Comment Status D

References in Table 33-9, Items 5 and 13, to paragraph 3.1.4.2 should actually refer to paragraph 3.1.4 where Icable is defined.

SuggestedRemedy

Modify references in 33-9, Items 5 and 13.

Proposed Response Response Status W

PROPOSED ACCEPT.

frs: Same as 212.

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.7.2.2 P91 L 10 # 134  
 Johnson, Peter Sifos Technologies

Comment Type T Comment Status X

This paragraph states that the Requested Power Level in the Power Value Field is "the power the output of the PSE's PI" and that the PSE is responsible for estimating line loss. This appears to contradict statements in 33.7.2.4 (Actual PD Power Value) and 33.7.6.2 (Variables which always define the power field as "Maximum input average power ... to the PD...". It also contradicts 33.7.5 where it is stated that an ACK or NACK must be generated when the incoming PDU has Requested Power Value NOT EQUAL to Actual Power value.

SuggestedRemedy

Assuming the intent is that the LLDP power fields ALWAYS carry the power level (draw) at the PD interface, 33.7.2.2 should be modified to: "In the case of the PSE, this maximum input average power the PD will consume if such power is accepted by the PSE".

Proposed Response Response Status O

Cl 33 SC 33.2.8.2 P46 L 38 # 135  
 Johnson, Peter Sifos Technologies

Comment Type T Comment Status D class pd

Table 33-6 suggests that the Minimum Power Level at the PSE Output for Class 0 would be Ptype from Table 33-9. Ptype can be 30W for Type 2. Since classification is purely a proper of a PD, a class 0 PD should never draw more than 15.4 Watts at the PSE interface.

SuggestedRemedy

Change minimum power level at the PSE to 15.4 W for Class 0.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See 322 and 356.

Cl 33 SC 33.2.4.7 P41 L 19 # 136  
 Johnson, Peter Sifos Technologies

Comment Type T Comment Status X

The PSE State Diagram Figure 33-11 makes no mention of the Tinrush timer in Table 33-9, Item 7. Tinrush Timer is not defined in 33.2.4.5 either where other state diagram timers are defined. Paragraph 33.2.9.6, Output current in startup mode, makes reference to Tlim in Item c), not Tinrush.

SuggestedRemedy

Tinrush timer definition should be added to 33.2.4.5 and Figure 33-11 should be modified to separate short circuit processing from inrush overload processing. Paragraph 33.2.9.6 Item c) should also reference Tinrush, not Tlim.

Proposed Response Response Status W

frs: We eagerly await your solution.  
 Same solution as 76.

Cl 33 SC 33.2.4.7 P39 L 51 # 137  
 Johnson, Peter Sifos Technologies

Comment Type T Comment Status D

The PSE State Diagram makes no provision for the PSE's right to remove power when static port voltage drops below Vport(MIN) as described in paragraph 33.2.9.1.

SuggestedRemedy

Solution #1:  
 Add an "ERROR DELAY Static Vport" state added along side of the other ERROR DELAY states with state transition along the lines of (Vport < Vport(MIN) + Vport > Vport(MAX)) \* Ipor < Icut. This is preferred if the condition is to be treated as an error condition.

Solution #2:  
 Equate the static voltage out-of-range condition with a the state variable power\_not\_available Figure 33-9.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 frs: same as 79.

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.1.4.1 P 25 L 50 # 138  
 Alan Flatman LAN Technologies

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

Type 2 operation requires Class D or better cabling as specified in ISO/IEC 11801:1995 but then Category 5e components are required. This does not make sense.

*SuggestedRemedy*

Delete 2nd sentence ("When Class D . . . . ISO/IEC 11801:2002").

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

With additions in 519

also, 300, 474, 392

Cl 33 SC 33.1.4.1 P 26 L 1 # 140  
 Alan Flatman LAN Technologies

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

note should provide an alternative TIA reference for Cat 5, not Cat 5e.

*SuggestedRemedy*

Change TIA reference to Cat 5 cabling.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE 124

Cl 00 SC 00 P L # 141  
 Thomas Dineen Dineen Consulting

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

Delete or modify Objectives 5, 9 10, 11, and 12! Objective should be clear, crisp, and concise thus making it straight forward for the reviewer of your draft to determine if they have been met! Keep in mind here that I consider this comment to be well within the proper scope of a WG Ballot in that part of the ballot review involves a determination of whether the draft meets the objectives.

Keep in mind here that I am not opposed to you project, I am concerned however that you objective list is bloated with non specific items that should be deleted of replaced with something more specific.

By this point in the project your "research", "vigorous pursuit", and "revisiting" should be concluded with concise results that can be boiled down to proper objectives.

"Objective 5 The enhanced standard will provide the maximum power to the PD as allowed within practical limits"

Objective 5 should be deleted because it is redundant to objective 6 and yet less specific thus offering no value. Also Objective 5 is in appropriate and non specific.

"Objective 9 Research potential extension of power classification to support PoEPlus modes"

Objective 9 is an inappropriate and non specific objective and should therefor be deleted or replaced. We do not specify "research" in an objective. How is the reader of the draft to determine if the research has been completed properly and thus the objective met? You either support the extension of power classification or you do not. No research Please delete or replace with something more specific.



IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.4.1.8.2 P 80 L 41 # 144  
 John Abbott Corning Incorporated

Comment Type T Comment Status X  
 The equation on line 41 for {NEXTconn}dB should (a) indicate log10 as on page 74 (section 33.4.3, Impedance Balance) and (b) technically one cannot take the SQRT of an argument w/ UNITS; f = frequency [MHz]/1 [MHz]

SuggestedRemedy  
 Substitute "log10" for "log" here and elsewhere for consistency.

Proposed Response Response Status W  
 reviewed

Cl 33 SC 33.2.3 P 32 L 51 # 145  
 Prof. Dr. Christian Kargel Bundeswehr University

Comment Type T Comment Status X 4P  
 One large market of PoE is the smart home technology which we are currently investigating in our own smart home. we have found that PoE is highly suitable for powering sensors, actuators and other smart home components in addition to communicating with them.

In order to reduce the amount of cabling and cost of installation for these components we have found that using all 4 pairs provides an optimized way in terms of the power required to operate a group of sensors and the number of cables needed to connect these sensors.

The current text in 802.3 precludes the simultaneous use of Alternative A and B. We are not aware of any technical, economical or reasons especially if the PSEs are coming from the same box/power system. As far as we know there are already systems available that deliver power over all 4 pairs while at the end of each 2P is a "2P PD interface" connected or even a single PD gets two 2P systems for applications that request higher power.

Those systems seem to be working well due to the fact that each 2P is independent in its functionality and orthogonal to the other 2P output.

SuggestedRemedy  
 Change the text in line 51 to allow the PSE to operate both Alternative A and Alternative B on the same link segment simultaneously.

Add a text in the PD specification (33.3.1) that requires the PD to meet the specifications of 2P system for any number of 2P system connected to it or delete the Note in page 57 line 42.

Proposed Response Response Status W

frs: also see 72.  
 This needs to be discussed.

The change suggested to the PD may break legacy PDs because not all of them will accept power on all pairs.

Cl 33 SC 33.7.2.5 P 91 L 39 # 146  
 Koper, Ezra Microsemi

Comment Type TR Comment Status X  
 In order to assure that PDU ACK/NACK reply sent back by PD to PSE or PSE to PD are related, two bit (bit2-3) sequence number should be added.  
 Each time PD or PSE initiate Data Link Layer PDU to advertise its state, or send change request PDU it should increment sequence number by one. ACK/NACK reply PDU should contain same sequence number (0-3)

In addition bit 0-1 of Acknowledge field should be given a name. I suggest to call it AckType

SuggestedRemedy

Change from:

Bit	Function	Value/meaning
7:2	reserved	reserved

to:

7:4	reserved	reserved
3:2	SeqNum	Two bit sequence number
1:0	AckType	1 0
	--	
	1 1	= loss of communications
	1 0	= non-acknowledge
	0 1	= acknowledge
	0 0	= not part of acknowledge cycle

Before line #46 add the following:

"Each time PD or PSE initiate Data Link Layer PDU to advertise its state, or send change request PDU it should increment sequence number by one. ACK/NACK reply PDU should contain same sequence number (0-3)"

Proposed Response Response Status O

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.7.7 P97 L 49 # 147  
 Koper, Ezra Microsemi

Comment Type TR Comment Status X

I would like to prevent PD from sending NACK whenever PSE send change request to inform PD that it would like to switch to backup power.  
 The reason is that the PD is not in a position to decide if PSE is allowed to change its power source or not. The same is applicable for power priority field.

SuggestedRemedy

1. Add in line 48 before "If the local...."

"PD is allowed to enter to non-acknowledge state and send NACK only when PSE send change request PDU with 'Requested PD Power Value' is below PD power consumption.

2. Update figure 33-28 (PD power control state diagram) to reflect this change.

Proposed Response Response Status O

Cl 33 SC 33.6 P84 L 3 # 148  
 Koper, Ezra Microsemi

Comment Type T Comment Status X

The text here is not clear.  
 for example: the relationship between MII/MDIO and PSE control is not clear.  
 The text in lines 3-7 should be replaced with the text from 802.3af which explains better that management option is applicable whenever PSE is instantiated in the same physical package as a PHY.

To make this subclause more clearer, the drawing below should be added

SuggestedRemedy

1. Replace the current text in lines 3-7 with the following text and drawing:

"Management of the PSE is optional. If the PSE is instantiated in the same physical package as a PHY and a Clause 22.2.4 MII or Clause 45.2 MDIO is physically implemented, then the management access shall use the PSE register definitions shown in 33.6.1. Where no physical embodiment of the MII or MDIO management is supported, equivalent management capability shall be provided"

2. Insert Figure "33-25-1 for subclause 33.6" after line 7.

Proposed Response Response Status O

Cl 33 SC 33.6 P84 L 3 # 149  
 Koper, Ezra Microsemi

Comment Type T Comment Status X

III registers 11 & 12 are PSE related therefore the PD should not be mentioned here in lines 3 and 6.

SuggestedRemedy

PD should be omitted from lines 3 and 6.

Proposed Response Response Status O

Cl 33 SC 33.7.2.1.3 P90 L 43 # 150  
 Koper, Ezra Microsemi

Comment Type TR Comment Status X

Per line #43 PSE can't set PoE port priority.

In 802.3af and RFC3621 (which is the SNMP MIB), only Type 1 PSE had the capability to set PoE port priority. In 802.3at PD should be in a position to suggest what should be its priority but not enforce it on the PSE due to the fact that the PSE should be the Master (from central power management point of view) and the PD is the slave and it is also good for backwards compatibility.

State diagram in section 33.7.6.5 (both for PSE & PD need to be changed in order to reflect the proposed change).

SuggestedRemedy

Replace lines 40-43 with the following text:

"When the power type is PSE, if PSE is interested to enforce its PoE port priority, it shall set this field to low/high/critical. PD shall always accept PSE enforced priority. If PSE would like to obtain PD priority rather than enforcing its own priority, it should set this field to 00"

Proposed Response Response Status O

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.7.2.2 P 90 L 54 # 151  
 Koper, Ezra Microsemi

Comment Type TR Comment Status X

Power value field should be changed so that there will be an option to mark this field as "Unknown" as it is possible in all the other fields of the TLVPDU (as power type, power source priority). Value 0 should be used as "Unknown".  
 This will allow for example, to chage PD priority without changing previous PD power request.

SuggestedRemedy

In Table 33-23 column "Value/Meaning"

Replace :  
 "Power = 0.1 x (decimal value of bits) Watts.  
 Valid values for these bits are decimal 0 through 295."

with:

"Value 0 = Unknown.  
 Power=0.1 x (decimal value of bits) Watts.  
 Valid values for these bits are decimal 1-295"

Proposed Response Response Status O

CI 33 SC 33.7 P 89 L 1 # 152  
 Jetzt, John Avaya

Comment Type TR Comment Status X

Data Link Layer classification would be enhanced by an additional, optional TLV. The purpos of this TLV would be for the PD to communicate to the PSE a fallback PD power value to whic the PD could fall back, if it became necessary.

The Power via MDI classification TLV defined in 33.7.2 enables the PSE or PD to send a requested PD power value that is lower than the actual PD power value. In the case of the PSE, this might be done if the PSE needs the PD to cut back on power. However, the power needs of a PD may often be in discrete power steps. That is, a PD may be able to curtail certain features and still maintain reasonable limited functionality. It would be useful for the P to be able to tell the PSE what the preferred lower PD power value would be.

SuggestedRemedy

Create a new subsection in 33.7. Call it: DTE Power via MDI fallback TLV.

The DTE Power via MDI fallback TLV is optionally used by the PD to send a preferred fallback PD power value to the PSE. This TLV is optionally used by the PSE only to acknowledge the fallback TLV from the PD. The PSE may optionally use the fallback PD power value if the PS requests a lower PD power value in a subsequent classification TLV.

The format of the fallback TLV can be modeled after Figure 33-26. The major difference is th: the fallback PD power value takes the place of the requested PD power value.

Proposed Response Response Status O

CI 33 SC 33.8 P 100 L 21 # 153  
 Jetzt, John Avaya

Comment Type E Comment Status X

Fix typo

SuggestedRemedy

". . . remove power, a PD shall set the aLLDPPoEPLocAcknowledge . . . "

Proposed Response Response Status O

## IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.3.5.2 P 64 L 14 # 154  
 Jetzt, John Avaya  
 Comment Type E Comment Status D ez class pd  
 Fix typos.  
 SuggestedRemedy  
 1. Title of 33.3.5.2: PD 2-Event . . .  
 2. First sentence: PDs implementing a 2-Event . . .  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 33 SC 33.7.2.1.1 P 89 L 49 # 155  
 Jetzt, John Avaya  
 Comment Type T Comment Status X  
 Need to include both Type 1 and Type 2 in the text.  
 SuggestedRemedy  
 Change sentence to:  
 This field shall be set to 11 for a Type 1 PD, 01 for a Type 2 PD (see 33.3), 10 for a Type 1 PSE, and 00 for a Type 2 PSE (see 33.2).  
 Proposed Response Response Status O

CI 33 SC 33.7.2.1.3 P 90 L 22 # 156  
 Jetzt, John Avaya  
 Comment Type E Comment Status X  
 Table 33-22:  
 Provide separate value/meaning information for the power priority (bits 1 and 0) of PDs and PSEs.  
 SuggestedRemedy  
 In front of the existing text of this cell:  
 When power type = PD  
 Then add:  
 When power type = PSE  
 1 0  
 1 1 Reserved  
 1 0 Reserved  
 0 1 Reserved  
 0 0 unknown (default)  
 Proposed Response Response Status O

CI 33 SC 33.7.2.2 P 90 L 47 # 157  
 Jetzt, John Avaya  
 Comment Type E Comment Status X  
 The phrase "power value" needs to be "PD power value" twice on this line, and in the title of Table 33-23.  
 Also globally, and when "requested" or "actual" is included, that word should precede "PD power value"  
 SuggestedRemedy  
 Change the phrase "power value" to "PD power value" twice on this line.  
 Also globally: see p.17,line.54; p.20,line.15; p.91,line.14; p.91,line.25; p.91,line.33; p.92,line.9; p.92,line.14; p.92,line.30; p.92,line.36; p.92,line.48; p.93,line.48; p.93,line.49; p.94,line.40; p.95,line.7.  
 Proposed Response Response Status O



## IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.7.2.2 P90 L47 # 158  
 Jetzt, John Avaya  
 Comment Type E Comment Status X  
 Clarify the sentence.  
 SuggestedRemedy  
 "... shall contain the currently requested PD power value, where PD power value is defined in Table 33-23."  
 Proposed Response Response Status O

CI 33 SC 33.7.2.4 P91 L25 # 161  
 Jetzt, John Avaya  
 Comment Type E Comment Status X  
 Clarify sentence.  
 SuggestedRemedy  
 "... contain the current actual PD power value, where PD power value is defined in Table 33-23."  
 Proposed Response Response Status O

CI 33 SC 33.7.2.2 P91 L6 # 159  
 Jetzt, John Avaya  
 Comment Type E Comment Status X  
 Delete the word "requested" from the definition of PD power value.  
 SuggestedRemedy  
 "where  
 Power is the effective PD power value"  
 Proposed Response Response Status O

CI 33 SC 33.7.2.5 P91 L47 # 162  
 Jetzt, John Avaya  
 Comment Type E Comment Status X  
 Add reference.  
 SuggestedRemedy  
 Add:  
 (see Figure 33-27 and Figure 33-28)  
 Proposed Response Response Status O

CI 33 SC 33.7.2.2 P91 L9 # 160  
 Jetzt, John Avaya  
 Comment Type E Comment Status X  
 Clarify this paragraph. Eliminate the phrase "this power".  
 SuggestedRemedy  
 Change paragraph to:  
 The effective PD power is the power at the input of the PD's PI, and so does not include channel losses. In the case of a PSE, the power at the output of the PSE's PI is the sum of the effective PD power and the channel loss. The PSE is therefore responsible for estimating and including channel loss when calculating the PSE allocated port power value.  
 Proposed Response Response Status O

CI 33 SC 33.7.3 P91 L51 # 163  
 Jetzt, John Avaya  
 Comment Type E Comment Status X  
 "Cross-reference" is hyphenated.  
 SuggestedRemedy  
 Make change globally.  
 See p.91,line 53; p.92,line 1; p.92,line 23; p.92,line 18; p.92,line 20; p.95,line 19; p.95,line 23.  
 Proposed Response Response Status O

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.7.3 P92 L6 # 164  
 Jetzt, John Avaya  
 Comment Type E Comment Status X  
 Fix capitalization.  
 SuggestedRemedy  
 Table 33-25 and Table 33-26:  
 In the TLV column, use "power source". (Four instances)  
 Proposed Response Response Status O

CI 33 SC 33.7.6.2 P94 L9 # 167  
 Jetzt, John Avaya  
 Comment Type T Comment Status X  
 Fix PD\_INITIAL\_VALUE definition.  
 SuggestedRemedy  
 "This value is derived from the pd\_max\_power variable of the PD state diagram . . ."  
 Proposed Response Response Status O

CI 33 SC 33.7.5 P92 L53 # 165  
 Jetzt, John Avaya  
 Comment Type E Comment Status X  
 Clarify sentence.  
 SuggestedRemedy  
 ". . . containing a DTE Power via MDI classification TLV being received with the Acknowledge field . . ."  
 Proposed Response Response Status O

CI 33 SC 33.7.6.2 P94 L4 # 168  
 Jetzt, John Avaya  
 Comment Type T Comment Status X  
 Fix PSE INITIAL VALUE for class 0.  
 SuggestedRemedy  
 It should be 130.  
 Proposed Response Response Status O

CI 33 SC 33.7.6.2 P93 L43 # 166  
 Jetzt, John Avaya  
 Comment Type E Comment Status X  
 Fix typo.  
 SuggestedRemedy  
 ". . . system does not want to change the . . ."  
 Proposed Response Response Status O

CI 33 SC 33.7.6.2 P94 L39 # 169  
 Jetzt, John Avaya  
 Comment Type E Comment Status X  
 Use apostrophe.  
 SuggestedRemedy  
 ". . . to the local system's last change in requested . . ."  
 Proposed Response Response Status O

CI 33 SC 33.7.6.2 P95 L19 # 170  
 Jetzt, John Avaya  
 Comment Type E Comment Status X  
 Fix typo.  
 SuggestedRemedy  
 "A summary of cross-references between . . ."  
 Proposed Response Response Status O

## IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.7.6.3 P95 L 42 # 171  
 Jetzt, John Avaya

Comment Type T Comment Status X  
 Use "PD power value" instead of "allocated power".

*SuggestedRemedy*

Use "PD power value" instead of "allocated power".

Also in line 45.

Proposed Response Response Status O

CI 33 SC 33.7.6.5 P96 L 26 # 172  
 Jetzt, John Avaya

Comment Type T Comment Status X  
 Fix variables in four paths of Figure 33-27.

*SuggestedRemedy*

Path from RUNNING state to REMOTE REQUEST state: change pd\_denial\_timer\_not\_done to pse\_denial\_timer\_not\_done.

Path from RUNNING state to LOCAL REQUEST state: change pd\_denial\_timer\_done to pse\_denial\_timer\_done.

Path from LOCAL REQUEST state to LOCAL ACK state: change locAcknowledge to remAcknowledge.

Path from LOCAL REQUEST state to LOCAL NACK state: change locAcknowledge to remAcknowledge.

Proposed Response Response Status O

CI 33 SC 33.7.6.5 P97 L 27 # 173  
 Jetzt, John Avaya

Comment Type T Comment Status X  
 Fix variables in two paths of Figure 33-28.

*SuggestedRemedy*

Path from LOCAL REQUEST state to LOCAL ACK state: change locAcknowledge to remAcknowledge.

Path from LOCAL REQUEST state to LOCAL NACK state: change locAcknowledge to remAcknowledge.

Proposed Response Response Status O

CI 33 SC 33.2.8 P44 L 25 # 174  
 Reshef, Tamir Microsemi Corp

Comment Type ER Comment Status D class pse

The word interrogation does not appear in any other place in the standard and therefore it is undefined, however detection is part of the mutual identification between a PSE and a PD

*SuggestedRemedy*

Remove the word interrogation and put detection instead

Proposed Response Response Status W

PROPOSED REJECT.

The intent of the word interrogation in this paragraph is to describe the probing portion of the classification mechanism. It does not mean detection.

If not defined in the standard, one should use an English dictionary as a basis for definition of term.

CI 30 SC 30.12.1.1.11 P19 L 12 # 175  
 Dove, Daniel ProCurve Networking b

Comment Type T Comment Status X

aLostCommunication is defined at 10Mb/s data rate but this does not provide a clear indication of how it works

*SuggestedRemedy*

Please modify to provide more thorough explanation of how this variable works.

Proposed Response Response Status O

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.1 P23 L32 # 176  
 Dove, Daniel ProCurve Networking b  
 Comment Type E Comment Status D cable  
 The paragraph starting with "The detection and powering..." should have a "NOTE:" comment in front of it.  
 SuggestedRemedy  
 Insert the word "Note: "  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 This is informative introductory text. There are no 'shalls'. In essence, this text is all a note.  
 Maybe you wanted a caution?  
 See 375

Cl 33 SC 33.1.3 P25 L19 # 177  
 Dove, Daniel ProCurve Networking b  
 Comment Type TR Comment Status X  
 The paragraph starting with "Any device..." essentially excludes mid-span devices as they do not contain an MDI compliant with Clauses 14,25 or 40.  
 SuggestedRemedy  
 Just thought I would mention it. You might want to insert "with the exception of midspan PSEs  
 Proposed Response Response Status W  
 If they aren't compliant, how do they work?  
 Baseline text

Cl 33 SC 33.2.4.7 P41 L16 # 178  
 Dove, Daniel ProCurve Networking b  
 Comment Type TR Comment Status D  
 The term "lport > ILIM \* power\_applied" makes no sense. If lport > ILIM, by definition, power is applied.  
 SuggestedRemedy  
 remove the term "power\_applied" or use it everywhere with an "\*" whenever power should be applied.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 frs: lport > ILIM can only be monitored after moving past pi\_powered.  
 Remove "\*power\_applied."

Cl 33 SC 33.2.8.1 P45 L44 # 179  
 Dove, Daniel ProCurve Networking b  
 Comment Type ER Comment Status D ez class pd  
 The language "assume it is powering a Type 2 PD" is not appropriate. We have a shall statement with the word "ass-u-me" behind it. What does that mean and how do you measure it?  
 SuggestedRemedy  
 Change to "assign Class 4 classification to the PD"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See 196

Cl 33 SC 33.2.11.1.2 P56 L16 # 180  
 Dove, Daniel ProCurve Networking b  
 Comment Type T Comment Status D  
 Figure 33-15  
 The language "Cpd\_d may be located either before or after the diode bridge" is not sufficiently clear. What does before mean? What does after mean?  
 SuggestedRemedy  
 I recommend illustrating the optional location of the capacitor so that it is clear.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE. frs: Suggest that the text be modified as follows:  
 Cpd\_d may be located either in parallel with Zac1 or as shown in Figure 33-15.

Cl 33 SC 33.7.1 P89 L17 # 181  
 Dove, Daniel ProCurve Networking b  
 Comment Type TR Comment Status X  
 "A device implementing Data Link Layer classification shall send power management Protocol Data Units(PDUs) and process PDUs received from the remote device at least once every 30 seconds." contradicts 802.1 specification which allows up to 3600 sec.  
 I am confirming that this is a requirement and therefore a super-requirement over 802.1  
 SuggestedRemedy  
 Clarify language to address 802.1 compliance, and compatibility.  
 Proposed Response Response Status O

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.7.2 P 89 L 26 # 182  
 Dove, Daniel ProCurve Networking b

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

I believe we need to consider changing the names of some fields, and adding some to provide clarity and functionality that is essential to the spec.

*SuggestedRemedy*

These changes apply here, and in clause 30 - do global search, change

- 1) Change Requested type/source/priority to "PSE Requested type/source/priority"
- 2) Change Actual type/source/priority to "PD Actual type/source/priority"
- 3) Add "PD Minimum type/source/priority" which declares the minimum power the PD can operate with so that a PSE may reduce its power to the minimum without causing it to shut down. Add appropriate sub-clause for definition which includes the value FF = unknown.
- 4) Add "PD Current type/source/priority" which declares the current power the PD is operating with so that a PSE may compute loss through the cable by subtracting this value from its own current power distributed. Add appropriate sub-clause for definition which includes the value FF = unknown. The power variable will not be required as a measurement, and may not be extremely accurate, but rather may be defined by the state of the PD and a factory setting that state.

Proposed Response Response Status **O**

CI 33 SC 33.7.2.2 P 91 L 10 # 183  
 Dove, Daniel ProCurve Networking b

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

Erroneous Statement - Not measuring output of PSE

*SuggestedRemedy*

Change "output of the PSE's" to "input of the PD's"

Proposed Response Response Status **O**

CI 33 SC 33.7.3 P 92 L 6 # 184  
 Dove, Daniel ProCurve Networking b

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

Table 33-25, 26  
 Changes to tables required to address earlier comment regarding TLV fields

*SuggestedRemedy*

Please add the variables

Proposed Response Response Status **O**

CI 33 SC 33.7.6.2 P 93 L 37 # 185  
 Dove, Daniel ProCurve Networking b

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

"where X is the decimal value of locActualPowerValue." is not sufficiently detailed.

*SuggestedRemedy*

Change to "where X is the decimal value of locActualPowerValue in increments of 100mW."

Proposed Response Response Status **O**

CI 33 SC 33.7.6.1 P 93 L 51 # 186  
 Dove, Daniel ProCurve Networking b

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

"where X is the decimal value of locRequestedPowerValue." is insufficient.

*SuggestedRemedy*

Change to "where X is the decimal value of locRequestedPowerValue in increments of 100mW."

Proposed Response Response Status **O**

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.7.6.2 P94 L 24 # 187  
 Dove, Daniel ProCurve Networking b  
 Comment Type ER Comment Status X  
 Wrong Figure cited  
 SuggestedRemedy  
 Figure 33-28 - Update Reference  
 Proposed Response Response Status O

CI 33 SC 33.7.6.5 P97 L 28 # 191  
 Dove, Daniel ProCurve Networking b  
 Comment Type TR Comment Status X  
 Many comments on this figure, too many to enter.  
 SuggestedRemedy  
 See attached figure.  
 Proposed Response Response Status O

CI 33 SC 33.7.6.2 P94 L 28 # 188  
 Dove, Daniel ProCurve Networking b  
 Comment Type ER Comment Status X  
 Incorrect figure cited  
 SuggestedRemedy  
 Figure 33-27 - Update Reference  
 Proposed Response Response Status O

CI 33 SC 33.2.9.13 P53 L 25 # 192  
 LANDRY, MATTHEW SILICON LABS  
 Comment Type E Comment Status D  
 "The values are based on a simulated output current unbalance of 3%."  
 This statement is unnecessary, because the numbers in Table 33-9 have been replaced with equation: 3% x ICable.  
 SuggestedRemedy  
 Strike the sentence.  
 Proposed Response Response Status W

CI 33 SC 33.7.6.3 P95 L 44 # 189  
 Dove, Daniel ProCurve Networking b  
 Comment Type TR Comment Status X  
 pd\_denial\_timer is set to the same value as pse\_denial\_timer, I believe they should be differe  
 SuggestedRemedy  
 Change one or both so they are not the same value, and preferrably non-integral of each othe  
 Proposed Response Response Status O

PROPOSED ACCEPT IN PRINCIPLE.  
 frs: Agree that the sentence is redondant.  
 Should we remove section 33.2.9.13 and reference to it? Or should we provide a definition fo unbalance?

CI 33 SC 33.7.6.5 P96 L 9 # 190  
 Dove, Daniel ProCurve Networking b  
 Comment Type TR Comment Status X  
 Too many comments, it would take a lifetime to enter them one at a time  
 SuggestedRemedy  
 See figure attached.  
 Proposed Response Response Status O

CI 33 SC 33.2.7.3 P43 L 19 # 193  
 LANDRY, MATTHEW SILICON LABS  
 Comment Type ER Comment Status D  
 Reference to Table 33-2 is incorreect.  
 SuggestedRemedy  
 Replace "Table 33-2 item 9" with "Table 33-4."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 frs: Assume this is p44.  
 Replace "Table 33-2" with "Table 33-4."

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.2.6.1 P42 L46 # 194  
 LANDRY, MATTHEW SILICON LABS

Comment Type TR Comment Status X

This subsection continues the inappropriate trend of overspecifying the method by which a PSE detects a valid PD. While it does describe a method that mostly works (and it is by no means close to foolproof!), it excludes other methods that satisfy the goal of correctly identifying the presence of a device presenting a valid detect signature, as defined in Table 33-4 items 3, 7, 9, 10, 11, 12, 13.

SuggestedRemedy

Loosen the strict nature of the current language. Separate the Valid and Invalid detection signature characteristics into their own tables.

Replace 33.2.6.1 and Table 33-4 with suggested replacement text in landry\_33.2.6.1\_v01.pdf

Proposed Response Response Status W

frs: Separating valid and invalid requirements will make the specification more readable.

I can not see attachments.

Cl 33 SC 33.2.8 P44 L47 # 195  
 LANDRY, MATTHEW SILICON LABS

Comment Type TR Comment Status D ez class pse

The normative statement, "a PSE shall meet one of the allowable classification permutations listed in Table 33-5," is sufficient for defining what a Type 1 or Type 2 PSE must implement. Further normative text, redundant in meaning to this first statement, should be moderated.

SuggestedRemedy

Replace:  
 "Subsequent to successful detection, all Type 2 PSEs shall perform classification. A Type 2 PSE performs classification using ..."

With:  
 "Subsequent to successful detection, all Type 2 PSEs perform classification using at least one of the following: ..."

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 33 SC 33.2.8.1 P45 L44 # 196  
 LANDRY, MATTHEW SILICON LABS

Comment Type TR Comment Status D ez class pd

The language, "a Type 2 PSE shall assume it is powering a Type 2 PD," is rather vague. Anyway, the behavior is captured in the state diagram, so this normative textual restatement is not necessary.

SuggestedRemedy

Replace:  
 "a Type 2 PSE shall assume it is power a Type 2 PD."

With:  
 "a Type 2 PSE will treat the PD as Type 2."

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 33 SC 33.2.9.2 P49 L51 # 197  
 LANDRY, MATTHEW SILICON LABS

Comment Type TR Comment Status D

The 0.44W minimum power figure comes from 44V \* 10mA.

This is the accurate minimum power subject to VPort min and IMin2 max for a Type 1 PD. It is not accurate for a Type 2 PD, which would be 50V \* 10mA = 0.5W.

This can be fixed by either changing the minimum power (0.44W -> 0.5W) or IMin2 (10mA -> 8.8mA). Rather than reducing the low current design margin, it makes more sense to increase the minimum power for Type 2 PSEs.

SuggestedRemedy

Replace occurrences of 0.44W with "IMin2 max x VPort min."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 frs: This is related to 431.

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.2.9.9 P51 L43 # 198  
 LANDRY, MATTHEW SILICON LABS

Comment Type TR Comment Status X

The units for the constant, K, are noted as mJ. This is not dimensionally valid ( $I^2 \cdot t \neq J$ ).

Furthermore, the selection of 0.025 as the I2t constant is based on the 802.3af power level, which is obviously exceeded by 802.3at. That makes 0.025 inappropriate for defining the PSE upperbound template in Figure 33-14.

But wait, it gets worse. There is a long segment at 1.75A, which corresponds to an I2t constar of 0.205, much greater than 0.025.

SuggestedRemedy

Use an I2t of 0.205, as this is more inclusive and further improves design margin. Update the PSE upperbound template accordingly.

If interested, ask commenter for excel graphs overlaying old template and new template.

Proposed Response Response Status W

frs: This needs to be discussed.

CI 33 SC 33.2.11.1 P54 L14 # 199  
 LANDRY, MATTHEW SILICON LABS

Comment Type TR Comment Status D

"The PSE may optionally monitor the AC MPS component only, the DC MPS component only or both the AC and the DC MPS components."

This statement is ambiguous, as it can be interpreted such that the PSE does not have to monitor any MPS component at all -- the whole list of options are "optional."

SuggestedRemedy

If the intent is that no MPS is needed at all, then by all means, leave it as is, but please updat the PICS.

Otherwise, change the sentence so that it forces the selection of at least one MPS:

"The PSE shall monitor either the DC MPS component, the AC MPS component, or both."

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 33 SC 33.3.5.2 P64 L34 # 200  
 Tziony, Noam Microsemi

Comment Type T Comment Status D class pd

Table 33-16  
 Item 2: Mark event voltage (VMark) 10V max

In order to simplify the PD front-end, Mark event maximum should be the same as the Detecti voltage maximum.

SuggestedRemedy

Change to:  
 Mark event voltage (VMark) 10.1V max

Proposed Response Response Status W

PROPOSED REJECT.

The challanging part of the PD front-end design is to land a threshold between 10 and 14.5V. Moving the Mark range to 10.1V actually makes the PD design slightly more difficult.

A secondary design requirement of the PD front-end is to maintain Mark characteristics throughout the Mark range of 7-10V. Extending this range to 10.1V actually makes the PD design slightly more difficult.

The signature range extending to 10.1V was intended to insure the PD maintains signature beyond the highest possible PSE probing voltage of 10V. (This could be argued not necessa

If a change were to be made to align these limits, it would make more sense to lower the PD signature range from 10.1V to 10.0V

CI 33 SC 33.3.5.2 P64 L38 # 201  
 Tziony, Noam Microsemi

Comment Type T Comment Status D class pd

Table 33-16  
 Item 4: Mark event threshold (VMark\_th) 10V min

In order to simplify the PD front-end, Mark event threshold minimum should be the same as t Detection voltage maximum.

SuggestedRemedy

Mark event threshold (VMark\_th) 10.1V min

Proposed Response Response Status W

PROPOSED REJECT.

See 200



IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.3.5.2 P 64 L 41 # 202

Tziony, Noam

Microsemi

Comment Type T Comment Status D ez class pd

Table 33-16

Item 6: Classification reset voltage (VReset), Additional Information: "See 33.3.5.2.1"

Subsection 33.3.5.2.1 don't talk about VReset at all.

*SuggestedRemedy*

Change to:

Additional Information: "See 33.3.5.2.2"

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 33 SC 33.2.8 P 45 L 14 # 203

Tziony, Noam

Microsemi

Comment Type TR Comment Status D class pd

Table 33-5

For the following Permutation:

PD Type: Type-2

Physical Layer classification: None

Data Link Layer classification: No

The Table says that:PD allowed?: N/A which doesnt make sense due to the fact that this is a Type 2 PD and it must support L1 and L2.

*SuggestedRemedy*

Change to:

PD allowed?: No OR explain what does it mean N/A or explain how to read this Table?

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

N/A is confusing.

Change table as follows:

PD Allowed?

N

Y

N

N

N (Was N/A)

N (Was N/A)

Y

Y

Y

Y

Y (Was N/A)

N (Was N/A)

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.2.8 P 45 L 16 # 204  
Tziony, Noam Microsemi

Comment Type **TR** Comment Status **D** class pd

Table 33-5  
For the following Permutation:  
PD Type: Type-2  
Physical Layer classification: None  
Data Link Layer classification: Yes  
The Table says that:PD allowed?: N/A which doesnt make sense due to the fact that this is a Type 2 PD and it must support L1 and L2.

*SuggestedRemedy*

Change to:  
PD allowed?: No OR explain what does it mean N/A or explain how to read this Table?

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

See 203.

Cl 33 SC 33.2.8 P 45 L 23 # 205  
Tziony, Noam Microsemi

Comment Type **TR** Comment Status **D** class pd

Table 33-5  
For the following Permutation:  
PD Type: Type-1  
Physical Layer classification: None  
Data Link Layer classification: No  
PD allowed?: N/A

Type-1 PD without Physical Layer classification is not allowed. Class 0 is a class and PD without special classification hardware, if it presents 0 to 4mA it is class zero. So in this case PD is not allowed.

*SuggestedRemedy*

Change to:  
PD allowed?: No OR explain what does it mean N/A or explain how to read this Table?

Proposed Response Response Status **W**

PROPOSED REJECT.

The permuation is allowed so it is Yes.

See 203

Cl 33 SC 33.2.8 P 45 L 25 # 206  
Tziony, Noam Microsemi

Comment Type **TR** Comment Status **D** class pd

Table 33-5  
For the following Permutation:  
PD Type: Type-1  
Physical Layer classification: None  
Data Link Layer classification: Yes  
PD allowed?: N/A

Type-1 PD without Physical Layer classification is not allowed. Class 0 is a class and PD without special classification hardware, if it presents 0 to 4mA it is class zero. So in this case PD is not allowed.

*SuggestedRemedy*

Change to:  
PD allowed?: No, OR explain what does it mean N/A or explain how to read this Table?

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

See 203

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.3.5.2 P 64 L 36 # 207

Tziony, Noam

Microsemi

Comment Type TR Comment Status D class pd

Table 33-16  
Item 3:  
Mark event current (IMark) is 0.25mA min  
This minimum value is not require. A zero value is OK too.  
Rational:  
Until PD gets to Vmark\_th, the current is 40mA which discharge the port.  
When PD detects Vmark\_th, current can be zero.  
The requirement of 0.25mA limits implementations.

*SuggestedRemedy*

Change to:  
Mark event current (IMark) 0mA min

Proposed Response Response Status W

PROPOSED REJECT.

Limiting PD behavior often eases PSE design and vise versa.

The requierment for the PD to draw 0.25mA minimum reduces design requirements for the PSE. PSEs are typically designed with one-sided drivers that can assert voltage onto the por but are unable to discharge the port. By mandating a minimum load current, the PSE can be designed without needing to implement a discharge circuit. Additionally, PSE stability requierments are eased when there is a limited range of load currents.

It can be aruged that the 0.25mA requirement limits PD implementations, however practically speaking, PDs will draw some current in order to maintain state memory. PDs are also requir to present an invalid signature which can be implemented by shorting the port with a ~10Kohr resistor thereby meeting both minimum current draw and invalid signature requirments.

Cl 33 SC 33.3.5.2.1 P 64 L 47 # 208

Tziony, Noam

Microsemi

Comment Type TR Comment Status D class pd

At Table 33-16, item 4 (VMark\_th), additional information "See 33.3.5.2.1".

I've looked at subsection 33.3.5.2.1 and I didn't find any explanations regarding VMark\_th

*SuggestedRemedy*

Add the following text to 33.3.5.2.1:  
"Vmark\_th is the operating range of the Mark event to be detected by the PD.  
The mark event voltage as specified in Table 33-16 item 2 is actually the PSE mark event ran after worst case cable voltage loss as measured at the PD PI.  
Once the PD detects Vmark\_th, it may reduce its current from Iclass to Imark.  
When PD gets to Mark event vottage range, the PD shall consume Imark"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Insert text at the end of 33.3.5.2.1:

"Vmark\_th is the PI voltage threshold at which the PD implementing 2-event classification transistions into and out of the DO\_CLASS\_EVENTx state as shown in Figure 33-17. Once this PD detects VMark\_th, it shall reduce its current from IClass to IMark."

Cl 33 SC 33.3.5.2.2 P 65 L 3 # 209

Tziony, Noam

Microsemi

Comment Type TR Comment Status D class pd

At Table 33-16, item 5 (VReset\_th), additional information "See 33.3.5.2.2".

I've looked at subsection 33.3.5.2.2 and I didn't find any explanations regarding VReset\_th

*SuggestedRemedy*

Add the following text 33.3.5.2.2

"Vreset\_th is the operating range of the Reset to be detected by the PD.  
Once the PD detects Vreset\_th, it will behave as specified in pd-reset Variable definition."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Insert the following at the start of 33.3.5.2.2.:

"VReset\_th is the PI voltage threshold at which the PD implementing 2-event classification transistions from the DO\_MARK\_EVENTx to the NOT\_MDI\_POWERED state as shown in Figure 33-17."

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.3.5.2 P 64 L 36 # 210

Tziony, Noam Microsemi

Comment Type TR Comment Status D class pd

Table 33-16  
Item 3:  
Mark event current (IMark) is 2mA max

We allow Imark\_lim to be 5mA minimum.  
So Imark can be up to <5mA.  
It is possible to get PSE voltage down too 7V with Imark up to 5mA.

SuggestedRemedy

Table 33-16 Item 3:  
Mark event current (IMark) 4mA maximum

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 33 SC 33.2.9 P 48 L 31 # 211

Stanford, Clay Linear Technology

Comment Type E Comment Status D

Table 33-9, Item 5 Parameter is labeled "Maximum", but the entry is a minimum. Remove Maximum from Parameter name.

SuggestedRemedy

Table 33-9, ITEM 5 PARAMETER

IS:  
Maximum output current in POWER\_ON mode

SHOULD BE:  
Output current in POWER\_ON mode

Proposed Response Response Status W

PROPOSED ACCEPT.  
frs: The table item description covers what is being measured while the column used determines if the value is a maximum or minimum.

FYI: In power-on the PSE needs to supply ICUT which is higher than I<sub>cable</sub>. Therefore, this is really an average current value.

CI 33 SC 33.2.9 P 48 L 31 # 212

Stanford, Clay Linear Technology

Comment Type E Comment Status D

Table 33-9, Item 5 Additional Information references 33.1.4.2. This references cable derating and seems in error. I think it should reference 33.1.4 Type 1 and Type 2 system parameters. (33.1.4 is where I<sub>cable</sub> is specified.)

SuggestedRemedy

Table 33-9, Item 5 Additional Information

IS:  
See 33.1.4.2, 33.2.9.5

SHOULD BE:  
See 33.1.4, 33.2.9.5

Proposed Response Response Status W

PROPOSED ACCEPT.  
frs: This references the appropriate sections.

CI 33 SC 33.2.9 P 48 L 50 # 213

Stanford, Clay Linear Technology

Comment Type E Comment Status D

Table 33-9, Item 13 Additional Information references 33.1.4.2. This references cable derating and seems in error. I think it should reference 33.1.4 Type 1 and Type 2 system parameters. (33.1.4 is where I<sub>cable</sub> is specified.)

SuggestedRemedy

Table 33-9, Item 13 Additional Information

IS:  
See 33.1.4.2

SHOULD BE:  
See 33.1.4

Proposed Response Response Status W

PROPOSED ACCEPT.  
frs:

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.2.9.5 P50 L17 # 214  
Stanford, Clay Linear Technology

Comment Type E Comment Status D  
Paragraph 33.2.9.5 is titled "PSE Maximum output current in POWER\_ON mode", however the value is a minimum. Remove "Maximum" from title. Remove "max" reference in IPort\_max.

Also note that in section 33.2.9.7 (p51, line 2) we reference Iport. Unless we accept this comment, 33.2.9.7 references a parameter that doesn't exist.

SuggestedRemedy

TEXT IS:  
33.2.9.5 PSE Maximum output current in POWER\_ON mode  
For VPort > VPort min, the minimum value for IPort\_max in Table 33-9 shall be (PPort / VPort)  
The current IPort\_max ensures PPort min output power.

TEXT SHOULD BE:  
33.2.9.5 PSE output current in POWER\_ON mode  
For VPort > VPort min, the minimum value for IPort in Table 33-9 shall be (PPort / VPort). The current IPort min ensures PPort min output power.

Proposed Response Response Status W

PROPOSED REJECT.  
frs: The interpretation may be incorrect.

Many IEEE parameters have names like xxx\_max. When the parameter is looked up in a table a maximum and a minimum is provided. Therefore, the minimum value of xxx\_max results in the minimum product with that term. This language is confusing.

It may be easier to understand if variable names were representative of their location and text using those variables indicated if a maximum or minimum value was being discussed.

CI 33A SC 33A P117 L1 # 215  
Stanford, Clay Linear Technology

Comment Type E Comment Status D  
Delete the Annex

The Annex contains many errors. Since it is informative, commenters aren't putting effort into making it accurate and it isn't maintained like the normative section. Readers treat it as if it were normative, and so in combination with the errors, the Annex causes confusion, not clarity.

If there is valuable information in the Annex, it should be brought into the normative section. GET RID OF IT!

SuggestedRemedy

Get rid of Annex.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

237

CI 33 SC 33.3.3.3 P58 L45 # 216  
Stanford, Clay Linear Technology

Comment Type E Comment Status D ez  
Erroneous reference to PSE. Should reference PD.

SuggestedRemedy

IS:  
pd\_dll\_capable  
This variable indicates whether the PD implements Data Link Layer classification. See 33.6.  
Values: FALSE: The PSE does not implement Data Link Layer classification.  
TRUE: The PSE does implement Data Link Layer classification.

SHOULD BE:  
IS:  
pd\_dll\_capable  
This variable indicates whether the PD implements Data Link Layer classification. See 33.6.  
Values: FALSE: The PD does not implement Data Link Layer classification.  
TRUE: The PD does implement Data Link Layer classification.

Proposed Response Response Status W

PROPOSED ACCEPT.  
See comment 103.

## IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.3.7.4 P 68 L 16 # 217  
Stanford, Clay Linear Technology

Comment Type E Comment Status D Pport typo

Paragraph on Peak Operating Current incorrectly uses term current when it should use pwoer and peak when it should use average.

*SuggestedRemedy*

IS:

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. Peak operati power shall not exceed PPeak max.

SHOULD BE:

At any static voltage at the PI, and any PD operating condition, the peak power shall not exce PPort max for more than 50 ms maximum and 5% duty cycle maximum. Average operating power shall not exceed PPort.

Proposed Response Response Status W

PROPOSED REJECT.

See commetrn 417

Cl 33 SC 33.2.8.2 P 46 L 3 # 218  
Stanford, Clay Linear Technology

Comment Type T Comment Status D class pd

Add requirement to wait 6ms in order to ignore startup transients.

Additions shown in [square brackets].

*SuggestedRemedy*

EXISTING TEXT:

The PSE in the state CLASS\_EV1 shall provide to the PI VClass as defined in Table 33-8. Th timing specification shall be as defined by TCLE1 in Table 33-8. The PSE shall measure IClass and classify the PD based on the observed current according to Table 33-7.

APPEND TO THIS PARAGRAPH:

[Measurement to be taken after TCLE1\_MIN to ignore initial transients.]

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

APPEND TO THIS PARAGRAPH:

Measurement to be taken after 5.5ms to ignore initial transients.

Dee 105

## IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.2.8.2 P 46 L 10 # 219  
Stanford, Clay Linear Technology  
Comment Type T Comment Status D class pd

Add requirement to wait 6ms in order to ignore startup transients.

Additions shown in [square brackets].

*SuggestedRemedy*

EXISTING TEXT:

When the PSE is in the state CLASS\_EV2, the PSE shall provide to the PI VClass, subject to the TCLE2 timing specification, as defined in Table 33-8. The PSE shall measure IClass and classify the PD based on the observed current according to Table 33-7.

APPEND TO THIS PARAGRAPH:

[Measurement to be taken after TCLE2\_MIN to ignore initial transients.]

*Proposed Response* Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

APPEND TO THIS PARAGRAPH:

[Measurement to be taken after 5.5ms to ignore initial transients.]

See 105

CI 33 SC 33.2.8.2 P 46 L 31 # 220  
Stanford, Clay Linear Technology  
Comment Type T Comment Status D ez class pd

In table 33-8, we specify a Classification Reset (15ms minimum with Vport<2.8V). We do not however discuss it in the text. Add text.

Additions shown in [square brackets].

*SuggestedRemedy*

TEXT IS:

All class event voltages and mark event voltages shall have the same polarity as defined for VPort in 33.2.3. The PSE shall complete 2-Event Physical Layer classification and transition to the POWER\_ON state without allowing the voltage at the PI to go below VMark min.

APPEND TO THIS PARAGRAPH:

[If the PSE returns to the IDLE state (Figure 33-9), it shall maintain the PI voltage at VReset for a period TReset before starting a new detection.]

*Proposed Response* Response Status W

PROPOSED ACCEPT.

CI 33 SC 33.2.9.6 P 50 L 51 # 221  
Stanford, Clay Linear Technology

Comment Type T Comment Status D

We reference informative figures from the Annex. In addition, these figures contain errors.

Remove reference to Annex figures.

*SuggestedRemedy*

IS:

f) During startup, for PI voltages between 0 V and 10 V, the max IInrush requirement is as specified in Table 33-9, item 6. See Figure 33C.4, Figure 33C.6, and Figure 33C.23.

SHOULD BE:

f) During startup, for PI voltages between 0 V and 10 V, the max IInrush requirement is as specified in Table 33-9, item 6.

*Proposed Response* Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

frs: This is related to 39, 225.

Using normative references to informative diagrams is confusing.

This needs to be resolved with the other reference comments.

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.2.9.7 P51 L6 # 222  
Stanford, Clay Linear Technology

Comment Type T Comment Status D

We reference informative figures from the Annex. In addition, these figures contain errors.

Remove reference to Annex figures.

SuggestedRemedy

IS:  
If IPort in Table 33-9 exceeds ICUT for longer than Tovld, the PSE may remove power from the PI. See Figure 33C.6.

SHOULD BE:  
If IPort in Table 33-9 exceeds ICUT for longer than Tovld, the PSE may remove power from the PI.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

frs:  
SHOULD BE:  
If IPort in Table 33-9 exceeds ICUT for longer than Tovld, the PSE may remove power from the PI. See Figure 33-14.

CI 33 SC 33.2.8.2 P46 L6 # 223  
Stanford, Clay Linear Technology

Comment Type TR Comment Status D class pd

Because of capacitance on the port, behavior during the transition from Class to Mark may be confusing to the observer. Additionally, this complicates Mark timing. Add text to clarify.

Additions shown in [square brackets].

SuggestedRemedy

TEXT IS:  
When the PSE is in the state MARK\_EV1, the PSE shall provide to the PI VMark as defined in Table 33-8.  
The timing specification shall be as defined by TME1 in Table 33-8.

APPEND TO THIS PARAGRAPH:  
[The MARK\_EV1 event commences when the PI voltage falls below VClass\_min and ends when the PI voltage exceeds VClass\_min.

The PI VMark requirement is to be met with load currents in the range of 0.25 to 2mA. In a properly operating PoE system, the port may or may not discharge to the VMark range due to the combination of channel capacitance and PD current loading. This is normal and acceptable PoE system operation. For compliance testing, it is necessary to discharge the port in order to observe the VMark voltage. Discharge can be accomplished with a 2mA load for 3ms, after which Vmark can be observed with minimum and maximum load current.]

Proposed Response Response Status W

PROPOSED ACCEPT.



IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.2.8.2 P 46 L 13 # 224  
Stanford, Clay Linear Technology

Comment Type TR Comment Status D class pd

Because of capacitance on the port, Mark timing needs clarification.

Add text to clarify.

Additions shown in [square brackets].

*SuggestedRemedy*

TEXT IS:

When the PSE is in the state MARK\_EV2, the PSE shall provide to the PI VMark as defined in Table 33-8.

The timing specification shall be as defined by TME2 in Table 33-8.

APPEND TO THIS PARAGRAPH:

[The MARK\_EV2 event commences when the PI voltage falls below VClass\_min and ends when the PI voltage exceeds VClass\_min.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 33 SC 33.2.9.6 P 50 L 49 # 225  
Stanford, Clay Linear Technology

Comment Type TR Comment Status D

Spec states:

During startup, for PI voltages between 0 V and 10 V, the MAX Inrush requirement is as specified in Table 33-9, item 6. (i.e. <400mA)

This statement is true, but what is important is the MINIMUM current. Minimum current is needed to drive the worst-case PD past 10V. Worst-case PD is 2mA while in Mark.

Change the statement from maximum to minimum and choose a value.

*SuggestedRemedy*

IS:

During startup, for PI voltages between 0 V and 10 V, the MAX Inrush requirement is as specified in Table 33-9, item 6.

SHOULD BE:

During startup, for PI voltages between 0 V and 10 V, the [minimum] Inrush requirement is 10mA.

Proposed Response Response Status W

PROPOSED REJECT.

frs: See 39.

I believe this is an interpretation problem.

If something draws significantly less than x, then providing (x+y) would be the maximum you required to supply satisfy at least x.

This assumes  $y > 0$ .

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.3.7 P 66 L 15 # 226  
Stanford, Clay Linear Technology

Comment Type TR Comment Status D Table 33-17

With the lower system operating current of 600mA (vs 720mA), voltage at PD due to cable dr is now higher. It is now 42.5V (vs 41V).

IS:  
Vpd = Vpse - Vcable = 50V - Icable \* 12.5ohms  
= 50V - 0.6A \* 12.5ohms = 42.5V  
WAS:  
Vpd = Vpse - Vcable = 50V - Icable \* 12.5ohms  
= 50V - 0.72A \* 12.5ohms = 41V

SuggestedRemedy  
Table 33-17, Item 1, Input Voltage

WAS: 41V (for Type 2 PD)  
SHOULD BE: 42.5V (for type 2 PD)

Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.

See Comment 65

CI 33 SC 33.3.5.1 P 63 L 45 # 227  
maggiolino, joseph broadcom

Comment Type TR Comment Status D ez class pd  
table 33-14 class 4 29.5w

SuggestedRemedy  
table 33-14 class 4 25.5w

Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.

See 43

CI 33 SC 33.4.4 P 77 L 19 # 228  
Albert Vareljian Altera Corp.

Comment Type E Comment Status D

In Figure 33-23--Pair to pair output noise voltage test: the first test terminal pertaining to the entity "PI A" is designated as "A". The second test terminal pertaining to the entity "PI B" and used in conjunction with the first terminal to perform pair-to-pair noise measurement is designated with the same name as the first terminal i.e. "A". This is ambiguous.

SuggestedRemedy  
Consider assigning the terminal pertaining to the entity "PI B" a different name, e.g. "B" or "A" etc.

Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.

Change "A" on p77 l19 to "B"

CI 33 SC 33.3.1 P 57 L 42 # 229  
Sanita', Gianluca Nokia Siemens Network

Comment Type E Comment Status D 2 x 25W

This comment tries to address all the PoE system that are not covered by the Power budget delivered over two pairs especially after that this budget has been reduced down to 30W at th PSE side.

SuggestedRemedy  
Replace:  
PDs that simultaneously require power from both Mode A and Mode B are specifically not allowed by this standard  
With:  
PDs that simultaneously require power from both Mode A and Mode B are out of scope of this standard

Proposed Response Response Status W  
PROPOSED REJECT.

Note: comment type field empty, set to E as a default.  
The Note starts with "PDs that implement only Mode A or Mode B are specifically not allowed by this standard." That means the PD must obtain full functionality on either and only one pair set because PSEs are specified that operate on only one Mode at a time, and either Mode is allowed. Thus a 2 x 25W device that REQUIRES MODE A and Mode B is not compatible with the standard based on interoperability. There are solutions like this today that are recognized be non-compliant. Labelling a noncompliant solution as out of the scope is dangerous.

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.2.3 P32 L51 # 230  
 Sanita', Gianluca Nokia Siemens Network

Comment Type TR Comment Status X 4P

This comment tries to address all the PoE system that are not covered by the Power budget delivered over two pairs especially after that this budget has been reduced down to 30W at th PSE side.

SuggestedRemedy

Replace:  
 PSEs shall not operate both Alternative A and Alternative B on the same link segment simultaneously  
 With:  
 Simultaneous operation of Alternative A and Alternative B is out of scope of the standard

Proposed Response Response Status W

frs: also see 72

This needs to be discussed.

Cl 33 SC 33.3.2 P58 L6 # 231  
 Sanita', Gianluca Nokia Siemens Network

Comment Type TR Comment Status D PD Underpowered

This comment tries to address all the Type-2 PDs that are not allowed to power up with only max Type-1 PD power budget.

SuggestedRemedy

Change  
 A Type 2 PD that does not successfully observe a 2-Event Physical Layer classification or Da Link Layer classification must conform to Type 1 PD power restrictions.  
 With  
 A Type 2 PD that does not successfully observe a 2-Event Physical Layer classification or Da Link Layer classification must conform to Type 1 PD power restrictions if defining a "underpower operational mode" is applicable to the PD specific appliance; otherwise the PD v power off."

Proposed Response Response Status W

PROPOSED REJECT.  
 We agree with the intent of the comment, but believe that the spirit is all ready encompassed w the existing text. A PD may intentionally present a bad MPS signature, effectively requesting that it be disconnected. This power level is consistent with Type 1 operation. It should be pointed out that a type 2 PD is required to provide a user notification if underpowered within th same paragraph (P58, L7) . It may be possible to do this within the spirit of the comment.

Cl 33 SC 33.3 P57 L6 # 232  
 LANDRY, MATTHEW SILICON LABS

Comment Type E Comment Status D ez

"33" is a clause. "33.3" is a subclause.

SuggestedRemedy

Replace "clause" with "subclause."

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 33 SC 33.3.4 P61 L22 # 233  
 LANDRY, MATTHEW SILICON LABS

Comment Type E Comment Status D ez

More than two voltage/current measurements may be made by the PSE during the detection process. The "slope" applies to any of an infinite number of voltage/current measurements. It therefore incorrect to specifically refer to "the two voltage/current measurements."

SuggestedRemedy

Delete "the."

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 33 SC 33.3.4 P61 L29 # 234  
 LANDRY, MATTHEW SILICON LABS

Comment Type E Comment Status D ez

The definitions for Vn and In are imprecise.

SuggestedRemedy

REPLACE:  
 "are the [voltage|current] measurements made at the PD PI"

WITH:  
 "are the first and second [voltage|current] measurements made at the PD PI, respectively"

Proposed Response Response Status W

PROPOSED ACCEPT.  
 Editor may need further direction.

## IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.3.5.2 P64 L14 # 235  
 LANDRY, MATTHEW SILICON LABS  
 Comment Type E Comment Status D ez class pd  
 Title of subsection is "IPD 2-Event class signature"  
 SuggestedRemedy  
 Replace "IPD" with "PD."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See 154

CI 33 SC 33.3.8.1 P70 L48 # 236  
 LANDRY, MATTHEW SILICON LABS  
 Comment Type E Comment Status D MPS  
 This subsection (33.3.8.1) need not be separated from 33.3.8.  
 SuggestedRemedy  
 Delete the 33.3.8.1 subsection title, folding Table 33-18 and the remaining NOTE into 33.3.8.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 33A SC 33A P117 L1 # 237  
 LANDRY, MATTHEW SILICON LABS  
 Comment Type TR Comment Status D  
 Annex 33A (informative) is not particularly informative. Given the already profuse nature of the Clause 33 Annexes, it should be excised in pursuit of clarity.  
 SuggestedRemedy  
 Strike Annex 33A.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 33C SC 33C.1.1 P122 L1 # 238  
 LANDRY, MATTHEW SILICON LABS  
 Comment Type TR Comment Status D  
 (1) Aesthetically, the "+/-" signs should be replaced with an actual plus-or-minus symbol.  
 (2) 15.4W as the max power should be changed to PType min.  
 SuggestedRemedy  
 Make the above suggested changes.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 243 (OBE?)

CI 33C SC 33C.1.2 P123 L1 # 239  
 LANDRY, MATTHEW SILICON LABS  
 Comment Type TR Comment Status D  
 (1) "+/-" should be replaced with the proper symbol, and spacing should be added between numeral and units in "10Hz."  
 (2) 15.4W reference should be PType min.  
 SuggestedRemedy  
 Per comment.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 243 (OBE?)

CI 33C SC 33C.1.3 P124 L1 # 240  
 LANDRY, MATTHEW SILICON LABS  
 Comment Type TR Comment Status D  
 15.4W reference is deprecated.  
 SuggestedRemedy  
 Reference PType min.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 243 (OBE?)

## IEEE P802.3at D3.0 PoEplus comments

CI 33C SC 33C.1.4 P 124 L 14 # 241  
 LANDRY, MATTHEW SILICON LABS

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

This test procedure should be updated to measure inrush performance against Inrush and TInrush. TLIM in this usage is deprecated.

*SuggestedRemedy*

Replace TLIM references with TInrush references. While at it, fix numeral-unit spacing and "+." symbols.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

243 (OBE?)

CI 33C SC 33C.1.5 P 126 L 36 # 242  
 LANDRY, MATTHEW SILICON LABS

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

(1) TPMDO should be TMPDO.

(2)  $44V \leq VPort \leq 57V$  should instead make reference to VPort min and VPort max. And "<" should be replaced with real mathematical inequalities.

*SuggestedRemedy*

Fix as recommended above.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

243 (OBE?)

CI 33C SC 33C P 121 L 1 # 243  
 LANDRY, MATTHEW SILICON LABS

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

Annex 33C contains almost innumerable "hardcoded" references to electrical parameters from 802.3af. It needs extensive rework to reflect the variable abstraction achieved by the P802.3a Task Force.

*SuggestedRemedy*

There are two options:

1) The TF chair should charter an ad hoc to review and repair Annex 33C;

2) delete the informative Annex altogether.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

Choose option 2

CI 33D SC 33D P 148 L 1 # 244  
 LANDRY, MATTHEW SILICON LABS

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

Annex 33D contains many "hardcoded" references to electrical parameters from 802.3af. It needs rework to reflect the variable abstraction achieved by the P802.3at Task Force.

*SuggestedRemedy*

The TF chair should charter an ad hoc to review and repair Annex 33D.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI 33E SC 33E P 151 L 1 # 245  
 LANDRY, MATTHEW SILICON LABS

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

Annex 33E contains many "hardcoded" references to electrical parameters from 802.3af. It needs rework to reflect the variable abstraction achieved by the P802.3at Task Force.

*SuggestedRemedy*

The TF chair should charter an ad hoc to review and repair Annex 33E.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.3.2 P58 L7 # 246  
 LANDRY, MATTHEW SILICON LABS

Comment Type **TR** Comment Status **D** PD Underpowered

While the goal of providing the user with notification that the PD is underpowered is admirable requiring such notification to be "local" and "external" is unnecessarily restrictive and vague.

*SuggestedRemedy*

Strike the words "local" and "external."

Proposed Response Response Status **W**

PROPOSED REJECT.

The objective is to let the person plugging a PD in, or troubleshooting a non-working PD to determine if the problem is due to a power type mismatch. This is necessary in a standard that is inherently creating incompatibilities. "Local" and "external" are neither vague or restrictive.

The comment's basis may not be clear and it may need to be clarified and entered at a later date.

CI 33 SC 33.3.4 P61 L12 # 247  
 LANDRY, MATTHEW SILICON LABS

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

This paragraph states that, "a PD shall present a valid detection signature ... while it is in a state where it will accept power via the PI, but is not powered via the PI."

For example, DO\_CLASS\_EVENT1 in the state diagram explicitly shows that the PD will accept power, but is not powered (indicated by the power\_received\*mdi\_power\_required exit condition). DO\_CLASS\_EVENT1 also, however, explicitly shows the PD presenting an invalid detection signature (present\_det\_sig <= FALSE). This seems to conflict with the text.

A similar argument can be constructed for the very next paragraph.

*SuggestedRemedy*

Since the state diagram appears to capture the intended behavior, REPLACE the first three paragraphs of 33.3.4 with the following:

When a PD presents a valid or non-valid detection signature, it shall present the detection signature at the PI between Positive VPort and Negative VPort of PD Mode A and PD Mode E. When a PD becomes powered via the PI, it shall present a non-valid detection signature on the set of pairs from which it is not drawing power.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

The proposed text loses some meaning, the following text addresses the concern. REPLACE the first three paragraphs of 33.3.4 with the following:

A PD shall present a valid detection signature while it is in a state where it will accept power via the PI, but is not powered via the PI per Figure 33-17. A Type 2 PD shall present a non-valid detection signature when in the mark state per Figure 33-17.

A PD shall present a non-valid detection signature at the PI while it is in a state where it will accept power via the PI per Figure 33-17.

When a PD presents a valid or non-valid detection signature, it shall present the detection signature at the PI between Positive VPort and Negative VPort of PD Mode A and PD Mode E as defined in 33.3.1. When a PD becomes powered via the PI, it shall present a non-valid detection signature on the set of pairs from which it is not drawing power.

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.3.5 P 63 L 15 # 248  
 LANDRY, MATTHEW SILICON LABS

Comment Type TR Comment Status D class pd

The classification permutation table, Table 33-5, explicitly shows that a Type 2 PD must implement both 2-Event class signature and Data Link Layer classification.

Thus, the statement that, "Type 2 PDs shall implement both ..." is redundant in the use of "shall."

*SuggestedRemedy*

Strike "shall."

Proposed Response Response Status W

PROPOSED REJECT.

May need guidance from senior staff.

Seems idea is for text to reflect intent of state diagrams, tables, and figures.

This text reflects intent shown in Table 33-5.

CI 33 SC 33.3.5.1 P 63 L 33 # 249  
 LANDRY, MATTHEW SILICON LABS

Comment Type TR Comment Status D class pd

Table 33-14 is wrong in two regards.

First, the power for Class 4 is no longer correct, as the maximum current for a Type 2 PSE changed in March 2008.

Second, the Class 0, 3, and 4 powers should be restated in terms of "ICable \* VPort min."

*SuggestedRemedy*

Replace the powers for Class 0, 3, and 4 with "ICable \* VPort min" or "PPort max as defined in Table 33-17."

Proposed Response Response Status W

PROPOSED REJECT.

(Note: Correction of 29.5W to Icable\*Vport performed in comment 43.)

Class 3 PD power is fixed at 12.95W regardless of cable capacity. Comment suggests to make PD power a function of I cable and Vport. This would allow a Class 3 PD to draw 25.5W which is not the intent of the specification. Comment could be implemented if further information on port voltage and cable type was provided, but seems counter productive.

CI 33 SC 33.3.5.2.1 P 64 L 47 # 250  
 LANDRY, MATTHEW SILICON LABS

Comment Type TR Comment Status D ez class pd

The VMark range overlaps with the detect range.

Thus, the statement, "when the voltage at the PI is in the range of VMark, a PD implementing Event class signature shall return a non-valid detection signature ..." is imprecise. It should or present this mark event signature in certain states of the state diagram.

*SuggestedRemedy*

FROM:

When the voltage at the PI is in the range of VMark, a PD implementing 2-Event class signature shall return a non-valid detection signature as defined in Table 33-13.

The PD must draw IMark when voltage at the PI is in the range of VMark.

TO:

When the PD is presenting a mark event signature as shown in the state diagram of Figure 33-17, the PD shall draw IMark as defined in Table 33-16 and present a non-valid detection signature as defined in Table 33-13.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 33 SC 33.3.5.2.2 P 65 L 2 # 251  
 LANDRY, MATTHEW SILICON LABS

Comment Type TR Comment Status D class pd

This subsection describing the pse\_power\_type reset behavior is out of place, not to mention incorrect in its description of how the state diagram resets the pse\_power\_type value.

*SuggestedRemedy*

Delete the 33.3.5.2.2 subsection title, and the first paragraph describing pse\_power\_type status variable. The second paragraph can remain as an appendage to 33.3.5.2.1.

Proposed Response Response Status W

PROPOSED REJECT.

Though the title and variable names are misleading, the section does provide valuable information about PD reset requirements.

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.3.7 P 66 L 28 # 252  
 LANDRY, MATTHEW SILICON LABS

Comment Type **TR** Comment Status **D** PD Tdelay

The Tdelay from the end of inrush to the engagement of Type 2 high power mode should be guaranteed to be longer than the time the PSE is in inrush mode.

The PSE may be in inrush for up to 75ms, and the PD has no knowledge of when the PSE transitions into full power mode.

Therefore, the PD must remain in inrush for at least 75ms.

*SuggestedRemedy*

Tdelay is 75ms min

Proposed Response Response Status **W**

PROPOSED REJECT.

See comment 45

CI 33 SC 33.3.7 P 66 L 38 # 253  
 LANDRY, MATTHEW SILICON LABS

Comment Type **TR** Comment Status **D** Vport\_static

VPort\_static is undefined.

*SuggestedRemedy*

Define it, or perhaps replace with the properly intended variable, or fix entire expression.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comment 86

CI 00 SC 00 P L # 254  
 Jody Williamson Leading Edge Diagnost

Comment Type **T** Comment Status **X** 4P

There is a large market for PDs that requires more power than allowed for 2P only.

There is a large market for PDs that requires more allowed over 2P only.

In addition PD users may enhance system efficiency even if they are using the maximum pow allowed for 2P and delivering it simultaneously over all 4P. In this case the cable power loss is reduced by 50% and implementing it in the PD is relatively easy.

There are currently 4P PSEs and PDs that working well. From system point of view, each 2P PSE is driving 2P PD interface hence the 2P base specification is kept for each 2P.

The rest is implementation.

The current text precludes easy and well proven implementations that required to simultaneously operate ALT A and B over the same cable and from the same segment which doesn't make sense.

*SuggestedRemedy*

Explicitly specify what configurations the specification wants to prevent and allow those that u ALT A and B from the same segment or power supply OR delete this text.

In addition, delete the note in page 57 the preclude PD to get power from ALT A and B simultaneously.

This is implementation issue as long as each 2P meets the specification in this standard.

Proposed Response Response Status **W**

reviewed



IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.2.9 P 48 L 31 # 255  
 Frosch, Richard Phihong USA

Comment Type E Comment Status D

1. Reference for I<sub>cable</sub> in table 33-9 is incorrect. Referencing section 33.1.4.2 is incorrect.
2. Having table 33-1 values on a separate page from the values listed in Table 33-9 is confusing for the casual designer.

SuggestedRemedy

1. Section referenced should be 33.1.4 to include cable parameters, cable requirement and cable derating.
2. Move 33-1 values into table 33-9 including cable derating information and remove reference back to 33.1.4

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 frs: related to 212. This could be accepted.

CI 33 SC 33.2.9 P 48 L 48 # 256  
 Frosch, Richard Phihong USA

Comment Type E Comment Status D

need definition for max

SuggestedRemedy

add see info in max column

Proposed Response Response Status W

PROPOSED REJECT.  
 frs: Table 33-6 provides the values that are dependent on the class negotiated.

Is there anything else that could do to prevent reader confusion?

CI 33 SC 33.2.9.9 P 52 L 15 # 257  
 Frosch, Richard Phihong USA

Comment Type T Comment Status D

Is I<sub>lim</sub> a minimum or maximum in figure 33-14?

SuggestedRemedy

TBD

According to table 33-9 minimum would be the same as 400/350\*I<sub>cable</sub> which makes I<sub>lim</sub> equal to the limit from 10ms to T<sub>ovldmin</sub> which means the graph is wrong.

Maximum makes no sense because maximum is defined by figure 33-14.

I<sub>lim</sub> was put somewhere in between the min and max but its not defined properly.

Proposed Response Response Status W

PROPOSED REJECT.  
 frs: Using legacy language,  
 ICUT\_MAX = ILIM\_MIN.

In this draft,  
 ICUT\_MAX <= ILIM < PSE upperbound template

CI 33 SC 33.3.5.1 P 63 L 45 # 258  
 Frosch, Richard Phihong USA

Comment Type T Comment Status D

ez class pd

Class 4 power in table 33-14 is wrong

SuggestedRemedy

Change 29.5W to 25.5W.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See 43

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.3.7 P 66 L 38 # 259  
 Frosch, Richard Phihong USA  
 Comment Type T Comment Status D Vport\_static  
 Vport\_static is undefined. I can not find any other reference in draft 3.0 to it.  
 SuggestedRemedy  
 Vport ad hoc team needs to define  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 See comment 86

Cl 33 SC 33.4.8.2 P 81 L 23 # 269  
 Darshan, Yair Microsemi Corporation  
 Comment Type T Comment Status X  
 Draft D3.0.  
 Draft D3.0.  
 1. Equation 33-14 needs to be updated with the results of worst case analysis.  
 2. The previous equation was approximation of the TF function done for filling up the TBD pric moving the draft to the working group as explained at the meeting. Attached is logarithmic accurate regression for the TF for the 100KHz to 1MHz band.  
 3. Some text modifications were made to simplify the test setup.  
 4. The definition for I<sub>bias</sub> which is required for the compliance test were corrected to match Table 33-9 definitions (I<sub>bias</sub> vs. I<sub>unb</sub>)  
 5. A drawing was added to clarify the test setup. See attached file.  
 6. See attached word file that summarize the changes.  
 SuggestedRemedy  
 Replace 4.8.2 with the new text attached in the file "33.4.8.2 Updates for Draft D3.0"  
 Proposed Response Response Status W  
 reviewed

Cl 33C SC 33C.1.4 P 125 L 20 # 270  
 Darshan, Yair Microsemi Corporation  
 Comment Type TR Comment Status D  
 Draft D3.0  
 The PSE is not required to support C<sub>test</sub>=1000uF during startup.  
 PD that use C<sub>pd</sub>>180uF is reasponsible to limit I<sub>nrush</sub> current to 400mA.  
 PD that use C<sub>pd</sub><=180uF is current limited by the PSE during startup. In this case the worst case time to fully charge the capaciotor is much less then 50msec however the PSE is require to be in I<sub>nrush</sub> current limit state for 50msec minimum.  
 Therefore C<sub>test</sub> is a maximum number for compliance!  
 C<sub>test</sub> need to be C<sub>test</sub>=I<sub>nrush</sub>\*TLIM/V<sub>port</sub> for mesuring T<sub>nrush</sub> (used to be TLIM).  
 Compliance test equipment should use C<sub>test</sub> that fits the PSE parameters above.

SuggestedRemedy  
 1. Delete the 1000uF value from C<sub>test</sub> in figure 33C.3  
 2. Change line 33 item 3 from:  
 "The capacitive load value C<sub>test</sub> is chosen to emulate inrush current during a startup mode condition.  
 C<sub>test</sub> is chosen larger than that allowable for C<sub>pd</sub> to ensure the PSE stays in inrush current limit for more than 75 ms or until TLIM is reached. Smaller C<sub>test</sub> capacitor values can be usec as long as C<sub>test</sub> > ( I<sub>nrush</sub> x TLIM / V<sub>Port</sub> ).  
 To:  
 "The capacitive load value C<sub>test</sub> is chosen to emulate inrush current during a startup mode condition.  
 C<sub>test</sub> is chosen larger than that allowable for C<sub>pd</sub> (180uF) to ensure that the PSE under test stays in inrush current limit for at least 50msec.  
 C<sub>test</sub> is derived from Table 33-9 items 1,6 and 7 of the PSE under test by the following equation: C<sub>test</sub> = ( I<sub>nrush</sub> x TLIM / V<sub>Port</sub> ).  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 243 (OBE?)

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.2.9 P 48 L 51 # 271  
 Darshan, Yair Microsemi Corporation

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

Draft D3.0:  
 Note to comment editor: Please delete my previous comment on this subject. This one contains improved remedy.

The additional information should be:  
 See 33.1.4, 33.1.4.1 and 33.1.4.2 due to the fact that all subclasses contain relevant information.

*SuggestedRemedy*

Change to:  
 See 33.1.4, 33.1.4.1 and 33.1.4.2

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.  
 frs: related to 213, and 96.  
 Is a pointer to the first section--33.1.4--enough? The all expand on the same thing. One key point should work.

CI 99 SC 99 P 1 L 35 # 272  
 Barrass, Hugh Cisco

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

The expiration date is 27th September 2008.

There is no need for the date to be so far in the future. The date should be set to the expected end of the ballot cycle for this draft - not for the whole Working Group ballot cycle.

As a result of this, there may be multiple non-expired drafts in existence at the same time. We must hope that this does not cause confusion during recirculations.

*SuggestedRemedy*

For the next draft, set the expiration date so that the draft expires before the next draft is expected to be published.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

see 494

CI 99 SC 99 P 2 L 17 # 273  
 Barrass, Hugh Cisco

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

"New text added to Draft D2.1"

This is draft 3.0

*SuggestedRemedy*

Check the front matter revision references in future...

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

We will do that. Accepting the comment results in no change to current Draft.

CI 01 SC 01.4 P 13 L 28 # 274  
 Barrass, Hugh Cisco

Comment Type **ER** Comment Status **D** power levels

"A PSE or PD that is designed for IEEE Std 802.3T-2005 power levels"

IEEE Std 802.3-2005 will shortly be replaced by a newer revision. That revision will, in turn be replaced by another revision (probably including this amendment).

Do not refer to a specific revision of 802.3. If you wish to specify a power level, then state the power level.

*SuggestedRemedy*

Replace

"A PSE or PD that is designed for IEEE Std 802.3T-2005 power levels"

with

"A PSE or PD that is designed for power levels between 0.5 and 12.95W (at the PD)"

Proposed Response Response Status **W**

See 275, 404



IEEE P802.3at D3.0 PoEplus comments

Cl 30 SC 30.12.1.1.6 P18 L12 # 280  
 Barrass, Hugh Cisco  
 Comment Type T Comment Status X  
 The behavior for aLLDPPoEPLocActualPowerType needs definition.  
 SuggestedRemedy  
 Insert before the "GET" statement:  
 "This reflects the local power type that has been acknowledged by the link partner."  
 The "GET" statement remains below this, separated by a line.  
 Proposed Response Response Status O

Cl 30 SC 30.12.1.1.9 P18 L40 # 283  
 Barrass, Hugh Cisco  
 Comment Type T Comment Status X  
 The behavior for aLLDPPoEPLocActualPDPowerValue needs definition.  
 SuggestedRemedy  
 Insert before the "GET" statement:  
 "This reflects the local power value that has been acknowledged by the link partner."  
 The "GET" statement remains below this, separated by a line.  
 Proposed Response Response Status O

Cl 30 SC 30.12.1.1.7 P18 L21 # 281  
 Barrass, Hugh Cisco  
 Comment Type T Comment Status X  
 The behavior for aLLDPPoEPLocActualPowerSource needs definition.  
 SuggestedRemedy  
 Insert before the "GET" statement:  
 "This reflects the local power source that has been acknowledged by the link partner."  
 The "GET" statement remains below this, separated by a line.  
 Proposed Response Response Status O

Cl 30 SC 30.12.1.1.11 P19 L12 # 284  
 Barrass, Hugh Cisco  
 Comment Type T Comment Status X  
 The counter for aLostCommunication has a maximum count rate of 1 per second at all link speeds.  
 SuggestedRemedy  
 Delete  
 "at 10 Mb/s"  
 Proposed Response Response Status O

Cl 30 SC 30.12.1.1.8 P18 L30 # 282  
 Barrass, Hugh Cisco  
 Comment Type T Comment Status X  
 The behavior for aLLDPPoEPLocActualPowerPriority needs definition.  
 SuggestedRemedy  
 Insert before the "GET" statement:  
 "This reflects the local power priority that has been acknowledged by the link partner."  
 The "GET" statement remains below this, separated by a line.  
 Proposed Response Response Status O

IEEE P802.3at D3.0 PoEplus comments

Cl 30 SC 30.12.2.1.10 P 21 L 17 # 285  
 Barrass, Hugh Cisco

Comment Type T Comment Status X  
 The definition for aLLDPPoEPRemAcknowledge is incomplete.

SuggestedRemedy  
 Change

"A GET attribute that returns the remote system response to a requested changes to the power value.;"

to:

"A GET attribute that returns the remote system loss of communication indicator or the response to a requested changes to the power value.;"

Proposed Response Response Status O

Cl 33 SC 33.7.6.5 P 96 L 27 # 286  
 Barrass, Hugh Cisco

Comment Type T Comment Status X  
 Typo.

pd\_denial\_timer\_done - in PSE state machine...

SuggestedRemedy

Change to pse\_denial\_timer\_done

Proposed Response Response Status O

Cl 33 SC 33.7.6.5 P 96 L 26 # 287  
 Barrass, Hugh Cisco

Comment Type T Comment Status X  
 Figure 33-27

"pd\_denial\_timer\_not\_done" doesn't make sense as a condition to transition to REMOTE\_REQUEST (even pse\_denial\_timer\_not\_done doesn't make sense).

SuggestedRemedy

Delete term "pd\_denial\_timer\_not\_done +"

Proposed Response Response Status O

Cl 33 SC 33.7.6.5 P 97 L 26 # 288  
 Barrass, Hugh Cisco

Comment Type T Comment Status X  
 Figure 33-28

"pd\_denial\_timer\_not\_done" doesn't make sense as a condition to transition to REMOTE\_REQUEST

SuggestedRemedy

Delete term "pd\_denial\_timer\_not\_done +"

Proposed Response Response Status O

Cl 33 SC 33.7.6.5 P 96 L 26 # 289  
 Barrass, Hugh Cisco

Comment Type T Comment Status X  
 Figure 33-27

"loss\_of\_comms = FALSE" doesn't make sense as an "OR" condition to transition to REMOTE\_REQUEST

SuggestedRemedy

Change term "(loss\_of\_comms = FALSE) +"

to "(loss\_of\_comms = FALSE) \*"

Proposed Response Response Status O

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.7.6.5 P97 L 26 # 290  
 Barrass, Hugh Cisco  
 Comment Type T Comment Status X  
 Figure 33-28  
 "loss\_of\_comms = FALSE" doesn't make sense as an "OR" condition to transition to REMOTE\_REQUEST  
 SuggestedRemedy  
 Change term "(loss\_of\_comms = FALSE) +" to "(loss\_of\_comms = FALSE) \*\*"  
 Proposed Response Response Status O

Cl 33 SC 33.7.6.5 P96 L 33 # 291  
 Barrass, Hugh Cisco  
 Comment Type TR Comment Status X  
 Figure 33-27  
 State machine is missing "collision" condition.  
 If the local system sends a request just before it receives a remote request - treat it the same getting a "NACK"  
 SuggestedRemedy  
 Change "locAcknowledge = NACK" to "(locAcknowledge = NACK) + (remRequestedPowerValue != remActualPowerValue)"  
 Proposed Response Response Status O

Cl 33 SC 33.7.6.5 P97 L 33 # 292  
 Barrass, Hugh Cisco  
 Comment Type TR Comment Status X  
 Figure 33-28  
 State machine is missing "collision" condition.  
 If the local system sends a request just before it receives a remote request - treat it the same getting a "NACK"  
 SuggestedRemedy  
 Change "locAcknowledge = NACK" to "(locAcknowledge = NACK) + (remRequestedPowerValue != remActualPowerValue)"  
 Proposed Response Response Status O

Cl 33 SC 33.7.6.5 P96 L 12 # 293  
 Barrass, Hugh Cisco  
 Comment Type TR Comment Status X  
 Figure 33-27  
 The state machine needs to support changes in other power objects - not just "PowerValue."  
 The use of locActualPowerValue, locRequestedPowerValue, remActualPowerValue, and remRequestedPowerValue within the state machine needs to be changed to accommodate other objects.  
 SuggestedRemedy  
 Comment reference \*\*HB-01\*\*  
 Within Figure 33-27:  
 Change locActualPowerValue to locActualPowerFields (4 instances)  
 Change locRequestedPowerValue to locRequestedPowerFields (4 instances)  
 Change remActualPowerValue to remActualPowerFields (2 instances)  
 Change remRequestedPowerValue to remRequestedPowerFields (3 instances)  
 See comment reference \*\*HB-03\*\* for changes to add definitins for these variables.  
 Proposed Response Response Status O

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.7.6.5 P97 L 12 # 294  
 Barrass, Hugh Cisco  
 Comment Type **TR** Comment Status **X**  
 Figure 33-28  
 The state machine needs to support changes in other power objects - not just "PowerValue."  
 The use of locActualPowerValue, locRequestedPowerValue, remActualPowerValue, and remRequestedPowerValue within the state machine needs to be changed to accommodate other objects.  
*SuggestedRemedy*  
 Comment reference \*\*HB-02\*\*  
 Within Figure 33-28:  
 Change locActualPowerValue to locActualPowerFields (4 instances)  
 Change locRequestedPowerValue to locRequestedPowerFields (4 instances)  
 Change remActualPowerValue to remActualPowerFields (2 instances)  
 Change remRequestedPowerValue to remRequestedPowerFields (3 instances)  
 See comment reference \*\*HB-03\*\* for changes to add definitins for these variables.  
 Proposed Response Response Status **O**

CI 33 SC 33.7.6.2 P94 L 13 # 295  
 Barrass, Hugh Cisco  
 Comment Type **TR** Comment Status **X**  
 Comments reference \*\*HB-01\*\* and \*\*HB-02\*\* added new variables for local and remote; actual and requested "PowerFields"  
 Definitions for these must be added into the variabl edefinitions section.  
*SuggestedRemedy*  
 Comment reference \*\*HB-03\*\*  
 Add the following definitions before "removePower"  
 locActualPowerFields  
 A concatenation of the fields that indicate the actual PD power type, source, priority and value of the local system. This variable consists of a 24 bit field: bits 23:16 correspond to the Actual power type/source/priority value defined in 33.7.2.3 bit 7 mapping to bit 23, etc.; bits 15:0 correspond to the Actual power value defined in 33.7.2.4. These are mapped to the attributes aLLDPPoEPLocActualPowerType; aLLDPPoEPLocActualPowerSource; aLLDPPoEPLocActualPowerPriority; and aLLDPPoEPLocActualPDPowerValue (30.12.1.1.6,30.12.1.1.7,30.12.1.1.8,30.12.1.1.9).  
 locRequestedPowerFields  
 A concatenation of the fields that indicate the requested PD power type, source, priority and value of the local system. This variable consists of a 24 bit field: bits 23:16 correspond to the Requested power type/source/priority value defined in 33.7.2.1 bit 7 mapping to bit 23, etc.; bi 15:0 correspond to the Requested power value defined in 33.7.2.2. These are mapped to the attributes aLLDPPoEPLocRequestedPowerType; aLLDPPoEPLocRequestedPowerSource; aLLDPPoEPLocRequestedPowerPriority; and aLLDPPoEPLocRequestedPDPowerValue (30.12.1.1.2, 30.12.1.1.3, 30.12.1.1.4, 30.12.1.1.5).  
 remActualPowerFields  
 A concatenation of the fields that indicate the actual PD power type, source, priority and value of the remote system. This variable consists of a 24 bit field: bits 23:16 correspond to the Actual power type/source/priority value defined in 33.7.2.3 bit 7 mapping to bit 23, etc.; bits 15 correspond to the Actual power value defined in 33.7.2.4. These are mapped to the attributes aLLDPPoEPRemActualPowerType; aLLDPPoEPRemActualPowerSource; aLLDPPoEPRemActualPowerPriority; and aLLDPPoEPRemActualPDPowerValue (30.12.2.1.6, 30.12.2.1.7, 30.12.2.1.8, 30.12.2.1.9).  
 remRequestedPowerFields  
 A concatenation of the fields that indicate the requested PD power type, source, priority and value of the remote system. This variable consists of a 24 bit field: bits 23:16 correspond to th Requested power type/source/priority value defined in 33.7.2.1 bit 7 mapping to bit 23, etc.; bi



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15:0 correspond to the Requested power value defined in 33.7.2.2. These are mapped to the attributes aLLDPPoEPRemRequestedPowerType; aLLDPPoEPRemRequestedPowerSource; aLLDPPoEPRemRequestedPowerPriority; and aLLDPPoEPRemRequestedPDPowerValue (30.12.2.1.2, 30.12.2.1.3, 30.12.2.1.4, 30.12.2.1.5).

Proposed Response      Response Status

Cl 33      SC 33.7.6.3      P 95      L 43      # 296  
 Barrass, Hugh      Cisco

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

If there is no difference between the pd\_denial\_timer and the pse\_denial\_timer then collisions will not resolve.

The PSE should win in any conflict.

SuggestedRemedy

Change the sentence:

"The timer is done when it reaches 1 second"

to:

"The timer is done after a period from 1.0 to 1.25 seconds"

Proposed Response      Response Status

Cl 33      SC 33.7.6.3      P 95      L 47      # 297  
 Barrass, Hugh      Cisco

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

If there is no difference between the pd\_denial\_timer and the pse\_denial\_timer then collisions will not resolve.

The PSE should win in any conflict.

SuggestedRemedy

Change the sentence:

"The timer is done when it reaches 1 second"

to:

"The timer is done after a period from 0.75 to 1.0 seconds"

Proposed Response      Response Status

Cl 33      SC 33.7.6.4      P 96      L 1      # 298  
 Barrass, Hugh      Cisco

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

With reference to comment \*\*HB-01\*\*

The request is evaluated on the basis of multiple power objects - not just the power value.

SuggestedRemedy

Change

TRUE: The requested change to the allocated power is accepted

FALSE: The requested change to the allocated power is not accepted

to

TRUE: The requested change to the allocated power objects is accepted

FALSE: The requested change to the allocated power objects is not accepted

Proposed Response      Response Status

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.8 P100 L12 # 299  
 Barrass, Hugh Cisco

Comment Type TR Comment Status X

"If Data Link Layer classification fails to come up within 5 minutes after the PSE has turned or power to the PD and the PSE identified the PD as a Type 2 PD via Physical Layer classification, the PSE may remove power."

In practical terms, 5 minutes might as well be infinity. This will significantly complicate the PSI validation process.

I'm trying to see the philosophy behind this behavior. It seems that the PSE is enforcing the F requirement to support data link layer classification if it wants higher power. Bear in mind that the standard already states that the PSE will provide (and allocate) power according to the L1 classification until the DLL classification amends that. Therefore there's no issue with protecting the PSE (as there is in the general policing function). I think it is foolhardy to try and design the PSE behavior to get deterministic response to non-compliant PDs - if any system is non-compliant then you can expect indeterminate behavior. The set of non-compliant and fault behavior is infinite.

SuggestedRemedy

Delete the entire sentence:

"If Data Link Layer classification fails to come up within 5 minutes after the PSE has turned or power to the PD and the PSE identified the PD as a Type 2 PD via Physical Layer classification, the PSE may remove power."

Proposed Response Response Status O

CI 33 SC 33.1 P25 L52 # 300  
 Frank, Yang CommScope

Comment Type T Comment Status D cable

... shall consist of Category 5e components as specified...

This paragraph indicates that users shall cat5e cord or connectors even if the the horizontal cabling is cat6 or better. This isn't desirable from cabling perspective.

SuggestedRemedy

... shall consist of Category 5e or better components as specified...

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE 519

CI 33 SC 33.1 P23 L15 # 301  
 Vetteth, Anoop Cisco

Comment Type E Comment Status D

There could be a problem with the structure of this sentence. I could be wrong also.

SuggestedRemedy

Please check the structuring of this sentence.

Proposed Response Response Status W

PROPOSED REJECT.

It says "a single interface to both the data it requires and the power to process this data"

This was carefully worded in AF. It is a single interface to:

1. the data
- AND
2. the power to process the data.

CI 33 SC 33.2.4.5 P35 L47 # 302  
 Vetteth, Anoop Cisco

Comment Type E Comment Status D

Referece to Table 33-9 for tpdcd\_timer (Tpdcd). This parameter is actually defined in Table 33-8

SuggestedRemedy

Change reference to Table 33-8

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 frs: Assume this is p36.

CI 33 SC 33.2.4.7 P39 L8 # 303  
 Vetteth, Anoop Cisco

Comment Type E Comment Status D

The variable "dll\_enabled" in the state "IDLE" should be "pse\_dll\_enabled"

SuggestedRemedy

Change "dll\_enabled" to "PSE\_dll\_enabled"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 frs: dll\_enable does not exist.

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.2.4.7 P 39 L 17 # 304  
 Vetteth, Anoop Cisco  
 Comment Type E Comment Status D  
 "do\_detection\_done" used for state transition from "START\_DETECTION" to "DETECT\_EVAL" is not defined anywhere  
 SuggestedRemedy  
 define "do\_detection\_done" in section 33.2.4.6  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 frs: We eagerly await your remedy.

Cl 33 SC 33.2.5 P 41 L 39 # 305  
 Vetteth, Anoop Cisco  
 Comment Type E Comment Status D  
 PSE operation is now dependent on Link  
 SuggestedRemedy  
 Strike this sentence  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 frs:

Cl 33 SC 33.3.3.5 P 60 L 5 # 306  
 Vetteth, Anoop Cisco  
 Comment Type E Comment Status D PD State Diagram  
 Not sure what is achieved by the state "NOT\_REQUESTING\_POWER". Seems like the condition that takes you into this state leads you out of the state as well  
 SuggestedRemedy  
 Editor please explain and double check the purpose of this state  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 1) No proposed Remedy  
 2) This state appears to differentiate an unpowered pd into two classes, those that want (required) power from those that do.  
 Since a PD may change its desire for power over time, "NOT\_REQUESTING\_POWER" provides a separate state. This state was present -2005, Figure 33-12

Cl 33 SC 33.3.7.4 P 68 L 16 # 307  
 Vetteth, Anoop Cisco  
 Comment Type E Comment Status D Pport typo  
 typo  
 peak current shall not exceed Pport max  
 SuggestedRemedy  
 Replace  
 peak current shall not exceed Pport max  
 with  
 peak power shall not exceed Pport max  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See comment 417

Cl 33 SC 33.3.8.1 P 70 L 50 # 308  
 Vetteth, Anoop Cisco  
 Comment Type E Comment Status D MPS  
 Rch is wrong  
 SuggestedRemedy  
 change Rch to Rch/2  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 33 SC 33.1.4.2 P 26 L 9 # 309  
 Vetteth, Anoop Cisco  
 Comment Type T Comment Status X cable  
 The NOTE on this page does not add any value. The job of a standard is to define interoperability. This note is not required to achieve interoperability.  
 SuggestedRemedy  
 Remove the NOTE  
 Proposed Response Response Status W  
 507, 508, 503

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.2.4.7 P39 L47 # 310  
Vetteth, Anoop Cisco

Comment Type T Comment Status D

One of the criterion for state transition from "POWER\_ON" state to "IDLE" state is (pse\_enabl = force\_power). This means that if no timers expire and force\_power is asserted when the poi is already on the port goes to IDLE state and then transits to TEST\_MODE. What is the rationale behind this.

SuggestedRemedy

Please check this transition. Should this be \*(pse\_enable = force\_power)?

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
frs: Need to discuss this.

CI 33 SC 33.2.4.7 P40 L35 # 311  
Vetteth, Anoop Cisco

Comment Type T Comment Status D

The variable "do\_classification\_done" has not been defined

SuggestedRemedy

Define "do\_classification\_done" in section 33.2.4.6

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
frs: We eagerly await your solution.

CI 33 SC 33.2.9 P48 L31 # 312  
Vetteth, Anoop Cisco

Comment Type T Comment Status D

Table 33-9 item 5  
Maximum output current in POWER\_ON mode lport\_max\_min is not l cable. It is dependent o the class of the PD.

SuggestedRemedy

Change l cable to Pclass/Vport

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
frs: Making this change results in a value that represents the present operating condition.

CI 33 SC 33.2.9.4 P50 L13 # 313  
Vetteth, Anoop Cisco

Comment Type T Comment Status D

lport\_max min x Vport min has been defined in Table 33-9 item 13 as Ptype min.

SuggestedRemedy

Use Ptype min

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 33 SC 33.2.9.5 P50 L19 # 314  
Vetteth, Anoop Cisco

Comment Type T Comment Status D

One of my earlier comments is to change item 5 in table 33-9 lport\_max min from l cable to Pclass/Vport. If this comment is accepted by the group then first sentence of section 33.2.9.5 does not add any value.

SuggestedRemedy

Delete first sentence.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
frs: This is related to 214.

CI 33 SC 33.2.9.6 P51 L8 # 315  
Vetteth, Anoop Cisco

Comment Type T Comment Status D

Lines 8-15 do not provide any additional information.  
ICUT is a range of values and has a min and max as shown in item 8 table 33-9

SuggestedRemedy

Remove lines 8-15

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
frs: The acceptance of this depends on how related comments are processed. See 420, 320 326, 324.

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.3.7 P 66 L 37 # 316  
 Vetteth, Anoop Cisco

Comment Type T Comment Status D

Table 33-17 Item 7 Class 4 peak operating power  
 The variable Vport\_static\_min has not been defined anywhere

*SuggestedRemedy*

Table 33-17 defines 2 variables Vport and Voverload.  
 Voverload defines the voltage when the PD is drawing peak power. Vport is the port voltage when the PD is drawing Pport.

Recommend replacing:  
 $Pport\_max / Vport\_static\_min \times Vport\_min$  with  
 $Pport\_max / Vport\_min \times Voverload\_min$

$Pport\_max/Vport\_min \times 400/350$  gives the peak current that the PD can draw.

It needs to be noted that Vport is the instantenous value for the PSE while it is the DC value for the PD. This needs to be specified in section 33.3.7.1

Recomment adding a comment in this section:  
 Vport is the port voltage when the PD is drawing Pclass\_pd  
 Define Pclass\_pd in Table 33-14

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See Comment 86

Cl 33 SC 33.3.7.5 P 69 L 35 # 317  
 Vetteth, Anoop Cisco

Comment Type T Comment Status D Dynamic PD V

The transient behavior described here is applicable only for type 2 PDs.

*SuggestedRemedy*

First Sentence:  
 .....the PSE is responsible for limiting the transient current drawn by the PD for up to TLIM min.

If previous comment to change TLIM to 50ms for type 1 PSE and 10ms to type 2 PSE is resolved then changing 10ms to TLIM min will fix this issue.

Second Sentence:  
 Type 2 PDs whose instantenous maximum power draw exceeds Pport max and/or have Cpor 180uF, may require high currents during transient conditions. Such PDs shall operate below the "PD upperbound tempelate," defined in 33.2.9.9 and Figure 13-14.

For type 2 PD behavior prior to 10ms and compliance model during a transient event, see 33F

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Note: Requires changes to PSE Tlim covered by another comment not available to me, see remedy

".....the PSE is responsible for limiting the transient current drawn by the PD for up to TLIM min."

Add sentence after the "For PD behavior prior to 10 ms and compliance models, see Figure 33F.1." (See comment 87 for changes):

"PDs shall operate below the PD Upperbound Tempelate, defined in 33.2.9.9 and Figure 13-1 outside of the conditions defined in Figure (moved 33F.1 to this location) as required by their Type (1 or 2)."

See comment 131 deals also with PSE Tlim.

See also comment 87, 99, 100.

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.3.7.6 P 69 L 44 # 318  
Vetteth, Anoop Cisco

Comment Type T Comment Status D PI Capacitance

There are multiple issues here  
1) Replace Rch with Rch/2  
2) This section assumes that the PSE is current limiting for 50ms  
3) Does not provide the ramp rate for the PI voltage transition from Vport min to Vport max

SuggestedRemedy

Suggest removing this section since there are no shall statements in this section. This section does not add any value. The PSE and PD behavior during transients and short circuit conditions have been clearly defined.

Proposed Response Response Status W

PROPOSED ACCEPT.

Remove 33.3.7.6

CI 33 SC 33.2.9.9 P 51 L 28 # 319  
Vetteth, Anoop Cisco

Comment Type T Comment Status D

There is no shall statement in this section that says that the PSE shall limit the current for a duration of TLIM.

SuggestedRemedy

Replace the note with:  
The PSE shall limit the current to ILIM for a duration of TLIM to account for transients at the P

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
frs: Related to 319, this solution addresses both. Adjust text.

Replace the note with:  
The PSE shall limit the current to ILIM for a duration of up to TLIM in order to account for transients at the PI.

CI 33 SC 33.1.4 P 25 L 43 # 320  
Vetteth, Anoop Cisco

Comment Type TR Comment Status D cable

Table 33-1  
The second row in the table shows parameter "Channel DC loop resistance".

SuggestedRemedy

This parameter should read "Maximum Channel DC loop resistance"

Proposed Response Response Status W

PROPOSED ACCEPT.

518

CI 33 SC 33.2.4.7 P 39 L 48 # 321  
Vetteth, Anoop Cisco

Comment Type TR Comment Status D

The transition from the state "POWER\_UP" to "ERROR\_DELAY\_SHORT" meets the transition from "POWER\_ON" to "ERROR\_DELAY\_SHORT". This used to be true in AF since the parameters for monitoring Tinrush and TLIM were the same. Now they have been defined differently.

SuggestedRemedy

Separate the two transitions. Add a new branch from "POWER\_UP" to "ERROR\_DELAY\_SHORT". The condition for this transition is "tinrush\_timer\_done". Add "tinrush\_timer" section 33.2.4.5 as A timer used to monitor the duration of in-rush condition, see Tinrush in Table 33-9.

Add a new state diagram to figure 33-11 to monitor and time Tinrush. This takes the same form as the existing middle diagram of figure 33-11, but replace tlim\_timer with tinrush\_timer, and only monitors linrush. In the existing middle diagram, remove the reference to linrush. This diagram then only monitors ILIM.

On figure 33-9, move tlim\_timer\_done to the TLIM monitoring branch.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
frs: Looks correct. Review.

## IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.2.8 P 46 L 37 # 322

Vetteth, Anoop

Cisco

Comment Type **TR** Comment Status **D** class pd

Table 33-6 shows minimum power level at output for Class 0 as Ptype.  
Ptype for a type-2 PSE is 30W with 600mA of cable current. But Class 0 minimum power level is 15.4W irrespective of the type of the PSE.

*SuggestedRemedy*

Change Ptype for Class 0 to 15.4W

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

See 356

CI 33 SC 33.2.9 P 48 L 42 # 323

Vetteth, Anoop

Cisco

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

Table 33-9 Item 10  
ILIM\_min for type 2 PSE is defined as  $(400/350) \times (P_{port}/V_{port})$ . This implies that the current limit is variable. The baseline for defining the current limit uses a fixed value of ILIM\_min at  $(400/350) \times I_{cable}$

*SuggestedRemedy*

Change  $(400/350) \times (P_{port}/V_{port})$  to  $(400/350) \times I_{cable}$

Proposed Response Response Status **W**

PROPOSED ACCEPT.  
frs: same as 420.

CI 33 SC 33.2.9 P 48 L 42 # 324

Vetteth, Anoop

Cisco

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

Table 33-9 Item 11  
TLIM\_min is defined as 50ms irrespective of the PSE type

*SuggestedRemedy*

Split the item according to PSE type. Use 50ms for type 1 and 10ms for type 2

Change 10ms in Section 33.2.9.9 lines 28-29 to TLIM min

Change 10ms with TLIM min in Figure 33-14

Change 10ms with TLIM min in the inequality on page 52 line 37 and 39

Proposed Response Response Status **W**

PROPOSED ACCEPT.  
frs: This supplies the correct values and replaces numbers with the equivalent variable. This helps prevent specification errors.

CI 33 SC 33.3.7 P 66 L 15 # 325

Vetteth, Anoop

Cisco

Comment Type **TR** Comment Status **D** Table 33-17

Table 33-17 Item 1 and 3  
The minimum values for type 2 PD is fixed at 41V and 39.7V. These need to be expressed in terms of  $I_{cable}$

*SuggestedRemedy*

Define:  
 $V_{port\ min} = 50 - R_{ch} \times I_{cable} / 2$   
 $V_{overload\ min} = 50 - R_{ch} \times I_{cable} \times 200 / 350$

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

See comments 421, 65

## IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.2.9 P48 L42 # 326  
Vetteth, Anoop Cisco

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

Table 33-9 Item 10  
The upper bound for Ilim is not defined. It points to "see info" in section 33.2.9.9  
Section 33.2.9.9 does not differentiate between type 1 and type 2 PSEs. The section also does not clearly state that a type 2 PSE can limit the current anywhere between (400/350)xcable a PSE upper bound template

*SuggestedRemedy*

Split the Max cell for item 10 for type 1 and type 2. Type 1 value should be 0.45A as per 802.3AF specification. Use "see info" for type 2 MAX value and point to section 33.2.9.9  
In 33.2.9.9 clearly state that the value maximum value of ILIM is the PSE upper bound template.

Proposed Response Response Status **W**

PROPOSED ACCEPT.  
frs: related to 324.  
Adds need to clearly state that ILIM may extend to the PSE upperbound template of Figure 33-14.

CI 33 SC 33.2.4.7 P39 L46 # 327  
Vetteth, Anoop Cisco Systems

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

pse\_enable does not exist.

*SuggestedRemedy*

Replace pse\_enable with mr\_pse\_enable.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE. frs: The task force should review this.  
mr\_pse\_enable does exist.

CI 33 SC 33.2.4.7 P40 L32 # 328  
Vetteth, Anoop Cisco Systems

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

Variable do\_classification\_done is not defined.

*SuggestedRemedy*

Define do\_classification\_done.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.  
frs: We eagerly await your solution.

CI 33 SC 33.2.9.8 P51 L20 # 329  
Vetteth, Anoop Cisco Systems

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

Normative text should reference normative figures.

*SuggestedRemedy*

Modify figure 33-14 to convey what minimum current the PSE shall provide and to show what maximum current a PD may demand.

On figure 33-14:

- Replace the PD boundary label 400/350xcable with Ipeak that is given by equation 33-1.
- Replace the PD boundary labeled I cable with ICUT which is Pclass/VPSE.
- Label the region from 0 to the PD boundary ILIM from time 0 to 10 ms as "short circuit range"
- Label the region from 0 to the PD boundary Ipeak from time 10 ms to Tovldmin as "overload range."
- Label the region from 0 to the PD boundary ICUT from time Tovldmin to end-of-the-scale as "normal operating range."
- Label the region between the PD and PSE boundary as PSE may remove PI power.
- Scan for other use of 33C.6 and replace these with a reference to Figure 33-24.

Proposed Response Response Status **W**

frs: Adjust text.  
Modify figure 33-14 to convey what minimum current the PSE shall provide and to show what maximum current a PD may demand.

On figure 33-14:

- Replace the PD boundary label 400/350xcable with Ipeak that is given by equation 33-1.
- Replace the PD boundary labeled I cable with ICUT which is Pclass/VPSE.
- Label the region from 400/350xcable to the PD boundary ILIM from time 0 to 10 ms as "short circuit range."
- Label the region from ICUT to 400/350xcable from time 0 ms to Tovldmin as "overload range"
- Label the region from 0 to the PD boundary ICUT from time 0 to end-of-the-scale as "normal operating range."
- Label the region between the PD and PSE boundary as PSE may remove PI power.
- Scan for other use of 33C.6 and replace these with a reference to Figure 33-14.



## IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.3.3.5 P 60 L 2 # 330  
Vetteth, Anoop Cisco Systems

Comment Type **TR** Comment Status **D** PD State Diagram

If Vport < Vreset\_th is true then you are in detection.

**SuggestedRemedy**

This term should be ANDed with a term that ensures the system is within a mark state.

See a related comment on state NOT\_REQUESTING\_POWER.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

Note: Committee to check

This term is present to handle falling out of the mark state.

Propose that this be handled by showing Vport < Vreset\_th condition on each mark state box with a line to NOT\_MDI\_POWERED.

Cl 33 SC 33.2.3 P 32 L 49 # 331  
Young, George AT&T

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

The sentence "Implementors are free to implement either alternative or both." is superfluous considering the preceding sentence.

**SuggestedRemedy**

Eliminate this sentence.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

Cl 33 SC 33.1.3 P 25 L 10 # 332  
Young, George AT&T

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

In Figure 33-3, the depiction of the PI interface is misleading. The arrow associated with the I identification is pointing to the medium.

**SuggestedRemedy**

The PI labeled arrow should rather be pointing to the connection from the PSE to the medium in the same manner as the MDI identification arrow appears in the left side of this figure.

Proposed Response Response Status **W**

PROPOSED REJECT.

The definition of PI is "The mechanical and electrical interface between the Power Sourcing Equipment (PSE) or Powered Device (PD) and the transmission medium."

This is a Midspan diagram and the segment noted by the arrow is correctly identified as the interface between the PSE and the PD.

Cl 33 SC 33.7.2.2 P 91 L 11 # 336  
sastry, ramesh Cisco Systems

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

Add the following line after line 11.

**SuggestedRemedy**

The calculation of cable loss this should match the methods used for Layer 1.

Proposed Response Response Status **O**

Cl 33 SC 33.7.5 P 92 L 48 # 337  
sastry, ramesh Cisco Systems

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

Add the following line after line 48

**SuggestedRemedy**

The 5 minutes has been chosen to insert a limit in the 2 X TTL timer range which can be ver large, and is used to assert a loss of communication event, after the initial Layer 2 commnication is established with the link partner, as explained in Sec 33.8

Proposed Response Response Status **O**

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.7.5 P95 L51 # 338  
 sastry, ramesh Cisco Systems

Comment Type T Comment Status X

Add the following line after line 52

SuggestedRemedy

The 5 minutes has been chosen to insert a limit in the 2 X TTL timer range which can be ver large, and is used to assert a loss of communication event, after the initial Layer 2 communication is established with the link partner, as explained in Sec 33.8

Proposed Response Response Status O

CI 33 SC 33.7.8 P99 L28 # 339  
 sastry, ramesh Cisco Systems

Comment Type T Comment Status X

Add more details about the collision and recovery behavior.

SuggestedRemedy

A new Figure 33-XX is provided (attachment) which is to be added after Figure 33-29. Page 9

Proposed Response Response Status O

CI 33 SC 33.3.2 P57 L52 # 340  
 sastry, ramesh Cisco Systems

Comment Type T Comment Status D Classification

Add the following text

SuggestedRemedy

The data link layer LLDP-POE can be optionally implemented for dynamic power negotiation when connected to Type 1 PSE which supports LLDP-POE.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

There does not appear to be a downside since it is redundant to Clause 33.3.5 (P63, L13) "A type 1 PD may implement any of the class signatures in 33.3.5 and 33.7." This also supporte in 33.7.

CI 33 SC 33.7.6.5 P96 L23 # 341  
 sastry, ramesh Cisco Systems

Comment Type T Comment Status X

Provide details about the state behavior in the Power Conserve mode

SuggestedRemedy

Add the details provided in the attachment to the State Machine in Figure 33-27 on Page 96

Proposed Response Response Status O

CI 33 SC 33.7.2 P89 L40 # 342  
 sastry, ramesh Cisco Systems

Comment Type TR Comment Status X

Add the following sentence after Line 40.

SuggestedRemedy

A Type-2 PD after being powered by PSE during boot up shall send at least one LLDP-POE TLV shown in Figure 33-26 with actual type/source/priority to the connected link partner for completion of mutual identification and classification. The PSE shall not change the power applied to the Type 1 or Type 2 PD till it receives this 1st TLV from the PD.

Proposed Response Response Status O

CI 33 SC 33.7.2.1.1 P89 L49 # 343  
 sastry, ramesh Cisco Systems

Comment Type TR Comment Status X

This field shall be set to 01 for a PD (see 33.3) and 00 for a PSE (see 33.2).

SuggestedRemedy

This field shall be set to 01 or 11 for a PD (see 33.3) and 00 or 10 for a PSE (see 33.2).

Proposed Response Response Status O

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.7.5 P92 L 41 # 344  
 sastry, ramesh Cisco Systems

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

An LLDPDU containing a DTE Power via MDI classification TLV shall be sent within 5 minute: of Data Link Layer classification being enabled in a PD as indicated by the variable pd\_dll\_enabled, or in a PSE as indicated by the variable pse\_dll\_enabled. See 33.2.4.4, 33.3.3.3, 33.7.6.2.

*SuggestedRemedy*

An LLDPDU containing a DTE Power via MDI classification TLV shall be sent after Data Link Layer classification being enabled in a PD as indicated by the variable pd\_dll\_enabled, or in a PSE as indicated by the variable pse\_dll\_enabled. See 33.2.4.4, 33.3.3.3, 33.7.6.2.

Proposed Response Response Status

CI 33 SC 33.7.6.3 P95 L 41 # 345  
 sastry, ramesh Cisco Systems

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

pd\_denial\_timer  
 A timer used to limit when a PD can make a new request to change the allocated power after request is denied. The timer is done when it reaches 1 second.

Change this text to the folloing in the Remedy Section

*SuggestedRemedy*

pd\_denial\_timer  
 A timer is used to limit when a PD can make a new request to change the allocated power aft a request is denied or when a collision is detected. The variable timer in the range of 1 - 1.25 sec shall be used.

Proposed Response Response Status

CI 33 SC 33.7.6.3 P95 L 44 # 346  
 sastry, ramesh Cisco Systems

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

pse\_denial\_timer  
 A timer used to limit when a PSE can make a new request to change the allocated power afte request is denied. The timer is done when it reaches 1 second.

Change this text to the folloing in the Remedy Section

*SuggestedRemedy*

pse\_denial\_timer  
 A timer is used to limit when a PSE can make a new request to change the allocated power after a request is denied or when a collision is detected. The variable timer in the range of 0.7 1.0 sec shall be used.

Proposed Response Response Status

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.8 P100 L1 # 347  
 sastry, ramesh Cisco Systems

Comment Type TR Comment Status X  
 Replace the entire text in 33.8 (lines 1-25) Loss of management frame communication with t following text

SuggestedRemedy  
 33.8 Loss of management frame communication  
 The following scenarios may cause loss of communication and the expected system behavior under these circumstances are presented

1)After the PSE has identified the PD as a Type 2 PD via Physical Layer classification, PSE shall not change the applied power to the PD till it receives the 1st TLV requesting for differen power value via Data Link Layer communication.  
 After Data Link Layer communication has been established there are three scenarios that ma cause a loss of management frame communication.

2) Upon loss of management frame communication, after a successful Layer 2 classification operation , both PSE and PD shall remain operational using the last acknowledged Data Link Layer classification. If a loss of management frame communication, after successful Layer 2 classification operation, persists for more than the smaller value of the remote TTL value (see IEEE Std 802.1AB-200X, subclause 9.5.4) for the PSE/PD or 5 minutes, shall assert the aLLDPPoEPLocAcknowledge (30.12.1.1.10) attribute in the DTE Power via MDI classification local object class to the enumeration "loss of communications." This will allow systems for any potential fault recovery.

3) If a loss of management frame communication, after successful Layer 2 classification operation, persists for more than the smaller of (2 x remote TTL) or 5 minutes, PSE may optionally power cycle the PD. If the loss of communication persists even after one power cycle, the PSE may optionally remove the the power to the PD. The PSE may remove power at any time per Figure 33-9.

4)PD may send a request to the PSE with the intention to enter the power conservation mode in which, the LLDP state machine in the PD may be non operational. It does this by sending the TLV with power priority field changed to "conserve" value as mentioned in the Table 33-2 . The PSE will respond with ACK with the minimum power value to be drawn by the PD in the requested value filed in the TLV. The PD will respond with requested power and the actual power values equal and enter the conserve mode. From then on PSE shall not treat this as loss of communication event . The PD can subsequently send an another TLV with power priority reverted back to its original value and the PSE can implement the time out behavior as described in this section.

PSE will always remove power to the PD when the PD draws current below the IPort\_MPS rr

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

value as specified in Table-33-18.  
 Proposed Response Response Status O

CI 33 SC 33.7.6.5 P96 L8 # 348  
 sastry, ramesh Cisco Systems

Comment Type TR Comment Status X  
 Old Text  
 pd\_dll\_enabled = FALSE

SuggestedRemedy  
 New text  
 pd\_dll\_enabled = FALSE  
 pse\_dll\_enabled = TRUE

Proposed Response Response Status O

CI 33 SC 33.7.6.5 P97 L3 # 349  
 sastry, ramesh Cisco Systems

Comment Type TR Comment Status X  
 Change the text "pd\_dll\_enabled = FALSE"

SuggestedRemedy  
 pd\_dll\_enabled = TRUE  
 pse\_dll\_enabled = FALSE

Proposed Response Response Status O

CI 33 SC 33.7.6.5 P96 L33 # 350  
 sastry, ramesh Cisco Systems

Comment Type TR Comment Status X  
 Add the following to detect the collusion in the Local Request state (line 30) in the NACK branch

SuggestedRemedy  
 locAcknowledge = NACK  
 (remRequestedPowerValue NOT= remActualPowerValue)

Proposed Response Response Status O

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.7.6.5 P97 L 28 # 351  
sastry, ramesh Cisco Systems

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

Add the following to detect collision in the Local Request state in the NACK branch (line 25)

*SuggestedRemedy*

locAcknowledge = NACK  
(remRequestedPowerValue NOT= remActualPowerValue)

Proposed Response Response Status **O**

Cl 33 SC 33.7.6.5 P 100 L 27 # 352  
sastry, ramesh Cisco Systems

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

Add the following sentence to support the power conservation mode operations.

*SuggestedRemedy*

PD may send a request to the PSE with the intention to enter the power conservation mode, in which, the LLDP state machine in the PD may be non operational. It does this by sending the TLV with power priority field changed to "conserve" value as mentioned in the Table 33-22. The PSE will respond with ACK with the minimum power value to be drawn by the PD in the requested value filed in the TLV. The PD will respond with requested power and the actual power values equal and enter the conserve mode. From then on PSE shall not treat this as loss of communication event. The PD can subsequently send another TLV with power priority reverted back to its original value and the PSE can implement the time out behavior as described in this section.

Proposed Response Response Status **O**

Cl 33 SC 33.7.2.1.1 P90 L 21 # 353  
sastry, ramesh Cisco Systems

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

The following changes are proposed to Table 33-22 to support low power modes in the PD to conserve power

*SuggestedRemedy*

New Text  
3 - reserved  
2:0 - 2 1 0  
1 X X = reserved  
1 0 0 = conserve  
0 1 1 = low  
0 1 0 = high  
0 0 1 = critical  
0 0 0 = unknown (default)

Proposed Response Response Status **O**

Cl 33 SC 33.8 P 100 L 26 # 354  
sastry, ramesh Cisco Systems

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

Add the following text about the Power removal due to MPS violation to add context.

*SuggestedRemedy*

PSE will always remove power to the PD when the PD draws current below the IPort\_MPS or value as specified in Table-33-18.

Proposed Response Response Status **O**

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.1.4 P 25 L 41 # 355  
 Pavlick Rimboim Microsemi corp.

Comment Type T Comment Status D  
 Table 33-1 uses "A" for maximum DC cable current, as other tables (33-9) and past standard used "mA" to describe current, it will be better to keep the same units all over the standard

SuggestedRemedy  
 Change units from "A" to "mA"

Proposed Response Response Status W  
 PROPOSED REJECT.

Readers understand the relationship between A and mA.

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CI 33 SC 33.2.8 P 46 L 44 # 356  
 Hopwood, Keith Phihong

Comment Type E Comment Status D class pd  
 Class 4 Power refers to a table 33-9. This is not clear  
 Lets make it easy and make it 30W (600mA 50V)

SuggestedRemedy  
 Replace reference to Table 33-9 to 30W

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

CommentType field empty, set to E as default

The commenter's suggestion to make the table clear is admirable. However, we must mainta backward compatiability.

The .af spec required a PSE that sees class 4 to "treat as class 0". (Refer to table 33-3 in the .af spec.) Therefore Type 1 PSEs must continue to treat class 4 PDs as Class 0.

The intent of the existing text in the 3.0 draft is for a Type 1 PSE to provide 15.4W and a type PSE to provide 30W. However this intent may not be clear to the casual reader.

Split table 4 with a column for Type 1 PSE behavior and a column for Type 2 PSE behavior.

CLASS	Pmin Type 1	Pmin Type 2
0	Pclass=15.4W	Pclass=15.4W
1	Pclass=4W	Pclass=4W
2	Pclass=7W	Pclass=7W
3	Pclass=15.4W	Pclass=15.4W
4	Pclass=15.4W	Pclass=30W

This eliminates the variable Ptype which is used in Table 33-9.

Remove item 13 from table 33-9.

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.3.5.1 P 63 L 45 # 357  
 Hopwood, Keith Pihong  
 Comment Type E Comment Status D ez class pd  
 Class 4 Power for PD can't be 29.5W with only 600mA  
 SuggestedRemedy  
 Change Value from 29.5W to 24.6W  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 CommentType field empty, set to E as default  
 See comment 43. Note, power is 25.5W, not 24.6W.

CI 99 SC 99 P 2 L 2 # 358  
 Piers Dawe Avago Technology  
 Comment Type E Comment Status D  
 Prepare abstract when?  
 SuggestedRemedy  
 It would be good to do this in preparation for Sponsor Ballot so it can get some minimal review  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 It will be added during the preparation process as stated in the draft.

CI 99 SC 99 P 2 L 17 # 359  
 Piers Dawe Avago Technology  
 Comment Type E Comment Status D  
 This isn't Draft 2.1  
 SuggestedRemedy  
 Update  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Be sure to have appropriate draft number during next comment period.

CI 99 SC 99 P 3 L 27 # 360  
 Piers Dawe Avago Technology  
 Comment Type E Comment Status D  
 Two broken URLs (although they work in Acrobat reader, which is great, they can't so easily be cut and pasted)  
 SuggestedRemedy  
 Please don't let them be split over lines; use line-feeds if necessary  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 99 SC 99 P 4 L 27 # 361  
 Piers Dawe Avago Technology  
 Comment Type E Comment Status X  
 'the individual balloting committee': yes, there is one balloting committee, not two. That's not a point.  
 SuggestedRemedy  
 If you mean 'the balloting committee composed of individuals', say so. Refer to 802.3 chairman who may refer it to 802 and/or to staff.  
 Proposed Response Response Status W  
 reviewed

CI 99 SC 99 P 5 L 32 # 362  
 Piers Dawe Avago Technology  
 Comment Type E Comment Status D  
 This table is not the current one used in 802.3ay  
 SuggestedRemedy  
 Replace with the latest which should be in the repository for all editors  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

IEEE P802.3at D3.0 PoEplus comments

CI 99 SC 99 P 6 L 1 # 363  
Piers Dawe Avago Technology

Comment Type **E** Comment Status **D**  
Waste of paper. This document insists on starting new clauses on even numbered pages, as we were going to receive a printed copy eventually. 802.3ay doesn't.

SuggestedRemedy  
Unless staff advise otherwise, start each clause on the next available page.

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

CI 01 SC 1.3 P 13 L 11 # 364  
Piers Dawe Avago Technology

Comment Type **TR** Comment Status **D** cable  
As <http://iee802.org/3/at/public/mar08/3n864.pdf> says, there is an approved work item proposal (NWIP - like a PAR) for developing ISO/IEC TR 29125; the NWIP is at <http://isotc.iso.org/livelink/livelink/fetch/2000/2122/327993/755080/1054034/2541793/JTC001N-8766.pdf?nodeid=6786149> but I could not see any sign that even a draft TR exists yet.

SuggestedRemedy  
As this TR is essential for Type 2 ???CHECK\*\*\*\*, a draft of P802.3at cannot be considered technically complete until it exists

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

Update Editor's note and provide reference.  
[EDITOR'S NOTE (to be removed prior to publication) — The reference will be updated as the project progresses.]  
ISO/IEC TR 29125 (draft), Information technology—Telecommunications cabling guidelines for remote powering of data terminal equipment. Draft document number ISO/IEC JTC 1/SC 25 N 864.

see 478, 510

CI 01 SC 1.4 P 13 L 18 # 365  
Piers Dawe Avago Technology

Comment Type **T** Comment Status **D** ez  
Look at 1.4.223 and 1.4.224, for midspan and Midspan PSE respectively. Effectively, 'midspan' is an adjective, and it is distinct from 'Midspan PSE'.

SuggestedRemedy  
Here, change 'A midspan that will' to 'A midspan PSE that will', twice.

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

CI 01 SC 1.4 P 13 L 19 # 366  
Piers Dawe Avago Technology

Comment Type **E** Comment Status **D** ez  
It's standard practice to give the reader a pointer to more information

SuggestedRemedy  
Please add to the end of each definition, '(See IEEE 802.3, Clause 33.)' or as appropriate

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

CI 30 SC 30.2.5 P 15 L 8 # 367  
Piers Dawe Avago Technology

Comment Type **T** Comment Status **X**  
Why Table 30-5a? Why not Table 30-6? And are you just abandoning Table 30-4-PSE Capabilities?

SuggestedRemedy  
Put the new entries in Table 4, or put them in Table 6 and deprecate Table 4.

Proposed Response Response Status **O**



## IEEE P802.3at D3.0 PoEplus comments

CI 30 SC 30.2.5 P15 L 8 # 368  
Piers Dawe Avago Technology  
Comment Type E Comment Status X  
LLDP: new abbreviation for 802.3  
SuggestedRemedy  
Add to abbreviations list, probably also need to add whatever-it-stands-for to definitions list.  
Copy from 802.1?  
Proposed Response Response Status O

CI 30 SC 30.2.5 P15 L 19 # 369  
Piers Dawe Avago Technology  
Comment Type E Comment Status X  
'LLDP Power Classification Local Basic Package' is a very long title. There is no non-basic package here.  
SuggestedRemedy  
Delete 'Basic'  
Proposed Response Response Status O

CI 30 SC 30.2.5 P293 L 39 # 370  
Piers Dawe Avago Technology  
Comment Type T Comment Status X  
I expect the text on this page will need revision. In particular, Table 30-5a claims that LLDP Power Classification Local Basic Package is mandatory, but I could not see a justification for that.  
SuggestedRemedy  
Per comment  
Proposed Response Response Status O

CI 30 SC 30.2.5 P291 L 39 # 371  
Piers Dawe Avago Technology  
Comment Type T Comment Status X  
I expect some of Figs 30-3, 30-4 and 30-5 will need revision  
SuggestedRemedy  
Per comment  
Proposed Response Response Status O

CI 30 SC 30.12.1.1.11 P19 L 12 # 372  
Piers Dawe Avago Technology  
Comment Type T Comment Status X  
Do you want this counter to increment at 100 counts per second for a 1000BASE-T link?  
SuggestedRemedy  
If not, delete 'at 10 Mb/s'?  
Proposed Response Response Status O

CI 30 SC 30.12.2.1.10 P21 L 16 # 373  
Piers Dawe Avago Technology  
Comment Type E Comment Status X  
the remote system response to a requested changes  
SuggestedRemedy  
the remote system's response to a requested change ?  
Proposed Response Response Status O

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.1 P 23 L 33 # 374  
 Piers Dawe Avago Technology  
 Comment Type **TR** Comment Status **X** cable  
 Text says 'The detection and powering algorithms are likely to be compromised by cabling the is multipoint as opposed to point-to-point, resulting in unpredictable performance and possibly damaged equipment.' while Fig 33-1 and 33-2 shows a medium running past the MDI, shared medium style.  
 SuggestedRemedy  
 First, is 'multipoint' the right word? Isn't that how PONs are? Second, if DTE Power should not be used on shared-medium Ethernet, show the medium coming to but not past the MDI/PI in Fig 33-1 and 33-2  
 Proposed Response Response Status **W**  
 reviewed  
 176, 375

CI 33 SC 33.1 P 23 L 33 # 375  
 Piers Dawe Avago Technology  
 Comment Type **T** Comment Status **X** cable  
 unpredictable performance and possibly damaged equipment': I wonder if there might be a risk of overheating also and a stronger warning, caution or whatever should be made  
 SuggestedRemedy  
 per comment  
 Proposed Response Response Status **W**  
 176

CI 33 SC 33.1.1 P 23 L 44 # 376  
 Piers Dawe Avago Technology  
 Comment Type **E** Comment Status **D** ez  
 A PD ... need no  
 SuggestedRemedy  
 A PD ... needs no  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.

CI 33 SC 33.1.1 P 23 L 47 # 377  
 Piers Dawe Avago Technology  
 Comment Type **T** Comment Status **D**  
 'Clause 33 utilizes the existing MDIs of 10BASE-T, 100BASE-TX, and 1000BASE-T without modification.': it doesn't matter if the MDIs exist or are newly built. When incorporated into the base standard, one piece of text is not 'older' than another (or at least, the reader cannot know which is older just from the standard, because material can be revised).  
 SuggestedRemedy  
 Delete 'existing'  
 Proposed Response Response Status **W**  
 PROPOSED REJECT.  
 This is baseline text.

CI 33 SC 33.1.3 P 24 L 18 # 378  
 Piers Dawe Avago Technology  
 Comment Type **T** Comment Status **D**  
 Don't use ALL CAPITALS  
 SuggestedRemedy  
 Change to upper and lower case as appropriate - three figures here  
 Proposed Response Response Status **W**  
 PROPOSED REJECT.  
 What does the style guide say? Also, baseline.

CI 33 SC 33.1.3 P 24 L 18 # 379  
 Piers Dawe Avago Technology  
 Comment Type **T** Comment Status **D**  
 Font too small  
 SuggestedRemedy  
 Change 7 point to 8 point - three figures here  
 Proposed Response Response Status **W**  
 PROPOSED REJECT.  
 What does the style guide say? Also, baseline.

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.1.3 P 25 L 8 # 380  
Piers Dawe Avago Technology

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

Fig 33-3 shows a medium running through a "midspan" and attached to a midspan PSE. The implication is that both AC signals and DC voltages and currents flow through past the midspan PSE. Figure 33-6 shows the PSE powering one side only, and the other isolated by transformers.

*SuggestedRemedy*

Change one or the other diagram to be consistent, and review the text. If one-sided powering the norm, then the midspan PSE has two interfaces, a MDI and a MDI/PI.

Proposed Response Response Status **W**

PROPOSED REJECT.

Don't agree that the diagram implies "that both AC signals and DC voltages and currents flow through past the midspan PSE"

CI 33 SC 33.1.4 P 25 L 32 # 381  
Piers Dawe Avago Technology

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

A system? What does that mean? A switch? Or just that portion powered/powering via a single MDI?

*SuggestedRemedy*

Be clearer

Proposed Response Response Status **W**

PROPOSED REJECT.

Disagree that it is unclear. A system, whatever you take that to be, has to conform to T33-1.

CI 33 SC 33.6 P 84 L 1 # 382  
Piers Dawe Avago Technology

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

Every clause that has one, has its environmental subclause last before the PICS

*SuggestedRemedy*

Move the remainder of this subclause to before 33.5

Proposed Response Response Status **O**

CI 33 SC 33.6.1.1.1 P 85 L 4 # 383  
Piers Dawe Avago Technology

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

Not 'the management entity should write to reserved bits with a value of '0'': it shouldn't be asked to write to them at all. We have fixed this in 802.3ay

*SuggestedRemedy*

If material in 33.6 is relocated, duplication removed, the problem might go away naturally.

Proposed Response Response Status **O**

CI 33 SC 33.7 P 89 L 1 # 384  
Piers Dawe Avago Technology

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

Every clause that has one, has its environmental subclause last before the PICS

*SuggestedRemedy*

Move the Data Link Layer classification subclause to before 33.5

Proposed Response Response Status **O**

CI 33 SC 33.7 P 89 L 5 # 385  
Piers Dawe Avago Technology

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

We have a mix of MDI-oriented volts and amps at the bottom of the layer diagram, and now a LLDP which is above 802.3's layer stack.

*SuggestedRemedy*

Do we need a layer diagram and some words explaining how these things are related?

Proposed Response Response Status **O**

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.7 P 89 L 18 # 386  
Piers Dawe Avago Technology

Comment Type TR Comment Status X

Text says 'A device implementing Data Link Layer classification shall send power management Protocol Data Units (PDUs) and process PDUs received from the remote device at least once every 30 seconds.' Per common sense and IEEE principles, a PD should be allowed to go to sleep, in which case this isn't appropriate.

SuggestedRemedy

Explain how this can work; does the PD retract its claim to Data Link Layer classification, temporarily? Or should the sentence be qualified with 'If not in low power mode' or similar?

Proposed Response Response Status O

Cl 33 SC 33.7 P 89 L 18 # 387  
Piers Dawe Avago Technology

Comment Type TR Comment Status X

Text says 'The information supplied by the Power Via MDI TLV defined in IEEE Std 802.1AB<sup>T</sup> Annex G.3 is superseded by the DTE Power via MDI classification TLV.' So there is a 'Power Via MDI' messaging protocol and a 'DTE Power via MDI classification'? If so, their names and functions are too similar, and this draft looks like an attempt to change 802.1AB, outside of 802.1AB, and without deprecating or obsoleting whatever is currently in 802.1AB. Is 'Power Via MDI' used for anything else?

SuggestedRemedy

If this is 802.1AB work, get the things you want into their draft, not here.

Proposed Response Response Status O

Cl 33 SC 33.7 P 89 L 11 # 388  
Piers Dawe Avago Technology

Comment Type TR Comment Status X

TLVs? Are these Slow Protocol TLVs?

SuggestedRemedy

If so, would an annex to 57 be the right place to define them (if not 802.1AB)? Anyway, a PM and-below clause seems the wrong place.

Proposed Response Response Status O

Cl 33A SC 33A P 117 L 30 # 389  
Piers Dawe Avago Technology

Comment Type E Comment Status D

Formatting problem: Figures should be Figure n-m not Figure n.m. It's OK in 802.3ay.

SuggestedRemedy

Apply the current template to the annexes?

Proposed Response Response Status W

PROPOSED ACCEPT.

237 (OBE?)

Cl 33F SC 33F.1.1 P 153 L 28 # 390  
Piers Dawe Avago Technology

Comment Type E Comment Status D

Test case 1, Test case 2

SuggestedRemedy

Test Case 1, Test Case 2 ?

Proposed Response Response Status W

PROPOSED REJECT.

Editor has no idea what this comment means. Without clarification from the commenter there is no choice but to reject.

Cl 33 SC 33.1.4 P 25 L 40 # 391  
Piers Dawe Avago Technology

Comment Type TR Comment Status D cable

Maximum DC cable current, about half an ampere? is that per cable (bundled) as it says, or per conductor, or per MDI (two conductors each way)?

SuggestedRemedy

Be clearer

Proposed Response Response Status W

PROPOSED ACCEPT.

Add footnote: I<sub>cable</sub> is the maximum output current in normal powering mode at the PSE.

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.1.4.1 P 25 L 52 # 392  
Piers Dawe Avago Technology

Comment Type T Comment Status D cable

Normative text says 'Type 2 operation requires Class D ... the cabling system components ... shall consist of Category 5e components as specified in ANSI/TIA/EIA-568-B.2 ... while NOTE says 'ANSI/TIA/EIA-568-B.2 provides a specification (Category 5e) for cabling that meets the minimum requirements for Type 2 operation.'

SuggestedRemedy

Is this a distinction between cabling system components and cabling? Or can the NOTE be deleted?

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE 519

Cl 33 SC 33.2 P 27 L 11 # 393  
Piers Dawe Avago Technology

Comment Type T Comment Status X

In 'Characteristics, such as the losses due to overvoltage protection circuits, or power supply inefficiencies, after the PI connector are not accounted for in this specification.', are the losses/inefficiencies in the cabling or in the PSE? Which direction is 'after'?

SuggestedRemedy

Be clearer

Proposed Response Response Status W

125, 480

Cl 33 SC 33.2.1 P 27 L 19 # 394  
Piers Dawe Avago Technology

Comment Type T Comment Status D editorial

Inappropriate 'shall', I think; requiring them to apply whenever is an action on the editor, not on the implementor of a PD or PSE.

SuggestedRemedy

Delete 'shall'

Proposed Response Response Status W

PROPOSED REJECT. "The requirements of this document shall apply equally to Endpoint and Midspan PSEs unless the requirement contains an explicit statement that it applies to only on implementation."

frs: This statement is in the legacy text and should produce text that is concise that ensures how subsequent shalls are applied. Recommend rejecting this.

Cl 33 SC 33.2.2 P 27 L 34 # 395  
Piers Dawe Avago Technology

Comment Type E Comment Status D

Midspan

SuggestedRemedy

Midspan PSE (or midspan entity)

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. "Note that this limitation is due to the presence of the Midspan regardless if it is supplying power or not."

frs: Suggested text:

Note that this limitation is due to the presence of the Midspan

PSE whether

it is supplying power or not.

Cl 33 SC 33.2.8 P 44 L 33 # 396  
Piers Dawe Avago Technology

Comment Type E Comment Status D ez class pse

Table 33-6 is mentioned here, before Table 33-5 and again on line 44 yet it does not appear until the end of page 46

SuggestedRemedy

Move its anchor earlier

Proposed Response Response Status W

PROPOSED ACCEPT.

Editor to swap table physical locations of tables 5 and 6. This will put table 6 ahead of table 5

Editor to swap table names and references to such tables.

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.3.4 P 61 L 34 # 397  
Piers Dawe Avago Technology

Comment Type E Comment Status D ez  
Wasted space

SuggestedRemedy

Make tables 33-12, 33-13 full width and resize column widths to contents. Check the anchors are on page 61 at the references to them and Table 33-12 should fit on p61. Start 33.3.5 on p62.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Propose that we give the editor license to reformat Table 33-12 and 33-13 to reduce height as well as compact the text.

CI 33 SC 33.4.2 P 73 L 37 # 398  
Piers Dawe Avago Technology

Comment Type TR Comment Status X

802.3 isn't a test standard or a test-equipment standard; we are just defining what we mean by parameters by showing a recipe to measure them. It's up to the test equipment vendor and user to decide what tolerances are needed; 1%, 0.1% or whatever. Test equipment tolerance evolves gradually over time. A spec with tolerances gets us into a silly game of double bluff: the result is within 1% is it a pass or a fail? Do I have to cover myself by correcting for the possible uncertainty in my customers 1% equipment? And so on.

SuggestedRemedy

As numbers are precise unless otherwise stated, remove the '+/- 1%' in all the test circuits

Proposed Response Response Status W

reviewed

CI 33 SC 33.4.8 P 79 L 27 # 399  
Piers Dawe Avago Technology

Comment Type TR Comment Status X

Does the Midspan PSE in Fig 33-25 power the cord to its left, its right, or both? Does the connection really extend from one end of it to the other?

SuggestedRemedy

Be clearer

Proposed Response Response Status W

reviewed

CI 33 SC 33.4.8 P 79 L 31 # 400  
Piers Dawe Avago Technology

Comment Type E Comment Status D  
Midspan insertion configuration

SuggestedRemedy

Midspan PSE insertion configuration

Proposed Response Response Status W

PROPOSED REJECT.

There is such a thing in 802.3 as just a Midspan. We are showing the location of the Midspan and not the more specific Midspan PSE.

CI 33 SC 33.6 P 83 L 25 # 401  
Piers Dawe Avago Technology

Comment Type E Comment Status X  
Wasted space

SuggestedRemedy

Start 33.6 here

Proposed Response Response Status O

CI 33 SC 33.6 P 84 L 1 # 402  
Piers Dawe Avago Technology

Comment Type TR Comment Status X

I believe that management register specifications are always in Clause 22 or Clause 45 (see 73.8 for an example).

SuggestedRemedy

Move the bulk of this subclause to Clause 22 or Clause 45 as appropriate

Proposed Response Response Status O

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.2.4.1 P 33 L 34 # 403  
 Lynskey, Eric Teknovus

Comment Type T Comment Status D  
 It seems that what you are trying to say here is that the PSE using Alternative A needs to complete a second detection before the Alternative B PSE. The Alternative B PSE waits Tdbo seconds between attempts, and the Alternative A PSE should complete a second attempt with 2 seconds. Since both of these values are the same, I suggest using Tdbo in both locations. For those unfamiliar with this clause, it makes it easy to understand the behavior if Tdbo is used in both places. Otherwise, you need to go 16 pages away to see that the two values are the same.

SuggestedRemedy  
 Replace "2 seconds" with Tdbo.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE. Same as 31.

CI 01 SC 1.4 P 13 L 28 # 404  
 Booth, Brad AMCC

Comment Type TR Comment Status X power levels  
 Poor use of reference.

Considering 802.3at will become part of the 802.3 standard, having a reference to a past version of the standard as a means to determine between Type 1 and Type 2 is a poor choice

SuggestedRemedy  
 Change reference to the standard to be a reference to the actual power level in IEEE Std. 802.3af.

Proposed Response Response Status W  
 see 274, 275

CI 33 SC 33.1.4.1 P 25 L 50 # 405  
 Booth, Brad AMCC

Comment Type TR Comment Status D cable  
 Confusing conflict of references. ISO/IEC 11801:1995 Class D cabling is different than ISO/IEC 11801:2002 Class D cabling. The statement that Type 2 requires ISO/IEC 11801:1995 Class D, but that all the components of the cabling system shall comply with ISO/IEC 11801:2002 Class D cabling.

SuggestedRemedy  
 Change paragraph to read:  
 Type 2 operation shall require Class D or better cabling as specified in ISO/IEC 11801: 2002.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE 405

CI 01 SC 1.4 P 13 L 30 # 406  
 Zimmerman, George Solarflare Communicati

Comment Type E Comment Status X power levels  
 Type 2 is specified to be "greater than 802.3-2005" power levels. From this specification, I believe this should be "greater than 802.3-2005, but less than or equal to 802.3at-2xxx" power levels". Otherwise, we're classifying nonstandard devices as "Type 2".

SuggestedRemedy  
 Add ", but less than or equal to 802.3at-2xxx" power levels" to the type 2 description.

Proposed Response Response Status W  
 470

## IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.2 P 27 L 6 # 407  
Zimmerman, George Solarflare Communicati

Comment Type E Comment Status X

"link section" is defined as the section from a PSE to a PD. If there is no PD (PD is unplugged), this definition fails, and becomes confusing. Further, it's not clear why PoE need its own definition of what other 802.3 clauses call a "link segment"

*SuggestedRemedy*

I must admit, I don't fully understand the distinction being made here, but it clearly breaks down when the PD is unplugged (because it is no longer on the "section"). Recommend at a minimum that the definition be modified as well to indicate where a PD may be attached. At maximum, consider using link segment terminology where appropriate.

Proposed Response Response Status W

If there is no PD, there is no link section so the definition does not apply if there is no PD. I recall this being heavily wordsmithed in AF, it is not equivalent to a link segment as the link section need not have data (I think this was the reason for the difference in terms).

CI 33 SC 33.2.4.4 P 34 L 45 # 408  
Zimmerman, George Solarflare Communicati

Comment Type E Comment Status D

option\_detect\_ted is likely to cause confusion verbally with the english "detected". Recommend searching for another name.

*SuggestedRemedy*

find another name - this may involve changing also the ted\_timer.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. frs: consider option\_signaled\_ted option\_timer\_ted

I suggest that "dectect" is scan and fixed in a similar way.

CI 33 SC 33.2.3 P 32 L 52 # 409  
Zimmerman, George Solarflare Communicati

Comment Type ER Comment Status D

Here "link segment" is used rather than link section, for apparently the same meaning that a PoE-specific term "link section" was needed elsewhere in this clause.

*SuggestedRemedy*

Consistently use link segment wherever possible, or add text to the definitions section or first usage in clause 33 explaining why it is appropriate to use link segment here for the connection between a PSE and PD, but you need to use link section in the other places.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. frs: Task the editor to locate "link segment" and "link section." Then determine which phrase is appropriate.

CI 33 SC 33.9 P 105 L 34 # 410  
Zimmerman, George Solarflare Communicati

Comment Type ER Comment Status D

Items have been renumbered in Table 33-9, Current unbalance is now Item 21, power turn on time is Item 14 - there may be more.

*SuggestedRemedy*

Check and fix Item number references in PICS. At least, current unbalance and power turn on time

Proposed Response Response Status W

PROPOSED ACCEPT.

This has been updated in the new PICS.

CI 33E SC 33E P 151 L 15 # 411  
Zimmerman, George Solarflare Communicati

Comment Type T Comment Status D

"At the maximum current allowed, this resistance unbalance equates to a 10.5 mA difference between the two paths." It looks like this has changed in the standard, but you forgot to delete it. The spec is now 3%.

*SuggestedRemedy*

Delete the sentence

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Can't delete the sentence, make it technically accurate.



IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.1.1 P 23 L 48 # 412  
 Zimmerman, George Solarflare Communicati

Comment Type TR Comment Status X

Objective for compatibility states that the standard uses 100BASE-TX MDI without modification. Imbalance currents for this standard go beyond the OCL current specifications in the ANSI FDDI specification referenced by the 100BASE-TX MDI spec. Modification or assumption of modifications common in the market is implied.

SuggestedRemedy

Either: include the assumptions made about compatible equipment (i.e., lower OCL due to core saturation, with the recommendation that to be compatible 100BASE-TX units be designed to tolerate xxx baseline wander), or modify the MDI specification for compatible 100BASE-TX equipment to specify the signal presented at the MDI. - a parallel comment will be submitted to maintainance to work this issue at the MDI.

Proposed Response Response Status W  
 reviewed

CI 33 SC 33.1.4 P 25 L 45 # 413  
 Zimmerman, George Solarflare Communicati

Comment Type TR Comment Status D cable

Table 33-1, Row "cable type" should be "minimum cable type". (I assume 802.3at either Type 1 or Type 2 will work on Class E or Class Ea cabling). Note that line 50 goes on to say in the table that Type 2 works on Class D or better. The table is inconsistent AND there is no similar statement I see for Type 1.

SuggestedRemedy

Either: replace "Cable Type" row heading by "Minimum Cable Class", OR, add "or better" to the row entries (preferred for clarity, if not for wordiness).

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

OBE 518

CI 33 SC 33.3.2.4 P 33 L 3 # 414  
 Zimmerman, George Solarflare Communicati

Comment Type TR Comment Status X PSE State Machine

state diagrams specify the "externally observable" behavior? the information in the diagrams goes beyond "externally observable" (internal counters, state variables, etc.), and it's not clear what this qualifier is intended to mean - it is not commonly used in other areas of 802.3. The qualifier appears to either require that the state variables need to be explicitly observable or that only the externally observable parts of the diagrams are required by the standard (unlikely).

SuggestedRemedy

Delete the qualifier "externally observable" (or all of line 3 - line 5 may be sufficient) and/or add text to explain what is meant to be included or excluded by it.

Proposed Response Response Status O

CI 33 SC 33.2.9.13 P 53 L 25 # 415  
 Zimmerman, George Solarflare Communicati

Comment Type TR Comment Status D

3% unbalance current may require assumptions on compatible 100BASE-TX transceivers (beyond the standard) with regards to baseline wander. Imbalance currents for this standard go beyond the OCL current specifications in the ANSI FDDI specification referenced by the 100BASE-TX MDI spec. Modification or assumption of modifications common in the market is implied.

(also in Table 33-9, line 21)

SuggestedRemedy

Either, restrict higher currents to 100BASE-TX which meet additional requirements or (preferred) modify the MDI specification for compatible 100BASE-TX equipment to specify the signal presented at the MDI. - a parallel comment will be submitted to maintainance to work this issue by providing a specification of the 100BASE-TX signal at the MDI.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 frs: We eagerly await your solution.

The concept of specifying the signal level at the transmitter is sound.

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.2.9 P48 L 38 # 416  
Stanford, Clay Linear Technology

Comment Type E Comment Status D

Pport and Pclass are used in spec and there is little difference between them.

It appears Pport is the Parameter (table 33-9, item 12) and Pclass is the Result of classificaiton and the minimum value of Pport.

To add additional confusion, there is yet another term Ptype, in which Pclass = Ptype.

*SuggestedRemedy*

Editor to search document and establish consistant usage of Pport, Pclass, and Ptype.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
frs: We eagerly wait your solution.

Cl 33 SC 33.3.7.4 P68 L 16 # 417  
Stanford, Clay Linear Technology

Comment Type E Comment Status D Pport typo

This comment is resubmitted and my previous comment shall be withdrawn.

Paragraph on Peak Operating Current incorrectly uses term current when it should use power.

*SuggestedRemedy*

IS:  
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.

SHOULD BE:  
At any static voltage at the PI, and any PD operating condition, the peak power shall not exceed PPort max for more than 50 ms maximum and 5% duty cycle maximum.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 33 SC 33.7.5 P91 L 13 # 418  
Stanford, Clay Linear Technology

Comment Type E Comment Status X

The paragraph is confusing.

Rewrite.

*SuggestedRemedy*

IS:  
If accepted by the PSE, the requested PD power value for a PD is the new maximum input average power (see 33.3.7.2) the PD will ever draw under this power allocation. If accepted by the PD, the PD requested power value for a PSE is the new maximum input average power it wants the PD to ever draw under this power allocation.

SHOULD BE:

Once a PD requested power value is accepted by the PSE, this is the new maximum input average power (see 33.3.7.2) the PD will ever draw under this power allocation. If the PSE requests the PD to run under a new PD power value, the PD may accept or reject the request. If accepted by the PD, this is the new maximum input average power the PD will ever draw under this power allocation.

Proposed Response Response Status O

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.7.7 P97 L 50 # 419  
Stanford, Clay Linear Technology

Comment Type E Comment Status X  
Introductory paragraph on DLL operation isn't clear. Rewrite.

Additions in [ ]

SuggestedRemedy

33.7.7 State change procedure across a link

IS:

If the local device is in the running state and the remote device changes to the request state, the local device observes the remote device's requested power through the aLLDPPoEPRemRequestedPDPowerValue (30.12.2.1.5) attribute in the DTE Power via MDI classification remote object class. The local device changes to an acknowledge state or a non-acknowledge state depending on acceptance of the remote device's requested change.

SHOULD BE:

[Normally both the local and remote devices are in the RUNNING state. When the remote device wants to request a new power level, ]the remote device changes to the LOCAL REQUEST state. The local device observes the remote device's REMOTE REQUEST through the aLLDPPoEPRemRequestedPDPowerValue (30.12.2.1.5) attribute in the DTE Power via MDI classification remote object class. The local device changes to an REMOTE ACK state or a REMOTE NACK state depending on acceptance or rejection of the remote device's requested change.

Proposed Response Response Status O

Cl 33 SC 33.2.9 P48 L 42 # 420  
Stanford, Clay Linear Technology

Comment Type T Comment Status D  
Table 33-9, errors in ILim entry.

For type 1 PSEs, current limit should match .af spec.  
For type 2 PSEs, lower limit is a function of Icable and not Pport/Vport.

SuggestedRemedy

Table 33-9  
Item 10 | Output current - at short circuit condition

TEXT IS:

Type 1: 0.4A to "See info"  
Type 2: (400/350) x (PPort/VPort) to "See info"

TESX SHOULD BE:

Type 1: (400/350) x Icable to .45A  
Type 2: (400/350) x Icable to "See info"

Proposed Response Response Status W

PROPOSED ACCEPT.  
frs: This specifies what Figure 33-14 intends.

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.3.7 P 66 L 22 # 421  
Stanford, Clay Linear Technology

Comment Type T Comment Status D Table 33-17  
With the reduction of I<sub>cable</sub> from .720 to .600 A, input voltages for PD are affected.

Table 33-17, Item 3, Input voltage range during overload  
I<sub>s</sub> 39.7V  
Should be 50V - (400/350 \* 600mA \* 12.5ohms) = 41.4V

SuggestedRemedy  
Table 33-17, Item 3, Input voltage range during overload

IS:  
39.7V minimum  
SHOULD BE:  
41.4V minimum

Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.

Table 33-17, Item 3, PSE type 2, change minimum entry to:

$V_{port\_min}(PSE) - (I_{cable} * R_{ch}/2 * 400/350)$

Add note to Additional information:  
"See Table 33-1"

CI 33 SC 33.2.9.9 P 51 L 24 # 422  
Stanford, Clay Linear Technology

Comment Type T Comment Status X  
The intent of Type 1 and Type 2 operation is not properly described.

SuggestedRemedy  
The original text was corrupted when the comment editor, edited the wrong box.

=> Make this box read only.

Proposed Response Response Status W  
frs: Discussed with commentor to arrive at a minimal acceptable change.

TEXT SHOULD BE:  
A PSE may remove power from the PI if the PI current exceeds the "PD upperbound template in Figure 33-14. Power shall be removed from the PI of a PSE before the PI current exceeds the "PSE upperbound template" in Figure 33-14.  
NOTE-The PSE, and not the PD, is responsible for limiting current during transients lasting less than 10 ms. The PD is responsible for limiting current for transients lasting more than 10 ms.

CI 33 SC 33.2.9.9 P 52 L 1 # 423  
Stanford, Clay Linear Technology

Comment Type T Comment Status D  
Figure 33-14 is unclear and contains errors. Redraw.

SuggestedRemedy  
Anoop to supply figure.

Proposed Response Response Status W  
PROPOSED REJECT.  
frs: We eagerly await Anoop's solution.  
See 441.

CI 33 SC 33.3.7 P 66 L 37 # 424  
Stanford, Clay Linear Technology

Comment Type T Comment Status D  
Table 33-17, Item 7, Peak Operating power, Class 4

Maximum value has formula:

$(400/350) \times (P_{port\ max} / V_{port\_static\ min}) \times (V_{port\ min})$

V<sub>port\_static</sub> isn't a defined parameter.

SuggestedRemedy  
Correct formula as desired.

Proposed Response Response Status W  
PROPOSED ACCEPT IN PRINCIPLE.

See comment 86

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.7.1 P 89 L 18 # 425  
Stanford, Clay Linear Technology

Comment Type T Comment Status X

The DLL classification requires PDs to respond every 30 seconds minimum. With the push for Green Power, future PoE systems will want ability to power down PHY but keep port connected to run micropower circuitry. We need to eliminate requirement for PD to respond every 30 seconds.

*SuggestedRemedy*

Remove requirement for PD to respond with DLL every 30 seconds. Do not remove port power if MPS is present but DLL is absent.

Proposed Response Response Status O

CI 33 SC 33.7.5 P 91 L 1 # 426  
Stanford, Clay Linear Technology

Comment Type T Comment Status X

The PD power encoding has 3 problems.

Presently, the power is scaled for 29.5W maximum. With the recent cable derating, the power is now 25.5W.

There was also talk early on to scale this power up to 100W to enable future higher power PoE. This should be implemented.

Line 9 says that for the PD the referenced power levels are at the PD connector. Line 10 then says that for the PSE, the power levels are at the PSE connector. This will cause confusion. We should just use PD power levels.

*SuggestedRemedy*

Scale the power to 100W.

Use power referenced to the PD connector only.

Proposed Response Response Status O

CI 33 SC 33.7.6.5 P 96 L 20 # 427  
Stanford, Clay Linear Technology

Comment Type T Comment Status X

Figure 33-27 PSE power control state diagram

Logical statement exiting RUNNING and entering REMOTE REQUEST seems in error.

Logical statement exiting RUNNING and entering LOCAL REQUEST seems in error.

Same correction seems necessary on Figure 33-28 PD power control state diagram.

*SuggestedRemedy*

IS:

(pd\_denial\_timer\_not\_done + (loss\_of\_comms = FALSE) + (local\_system\_change = FALSE)) \* (remRequestedPowerValue < remActualPowerValue)

SHOULD BE:

(pd\_denial\_timer\_done \* (loss\_of\_comms = FALSE) \* (local\_system\_change = FALSE)) \* (remRequestedPowerValue < remActualPowerValue)

IS:

(local\_system\_change = TRUE) \* (loss\_of\_comms = FALSE) \* pd\_denial\_timer\_done

SHOULD BE:

(local\_system\_change = TRUE) \* (loss\_of\_comms = FALSE)

Proposed Response Response Status O

CI 33 SC 33.3.5.1 P 63 L 45 # 428  
Stanford, Clay Linear Technology

Comment Type T Comment Status D

Table 33-14 PD Power Classification

Class 4 still references 29.5W

Change to 25.5W or I<sub>cable</sub> \* V<sub>port</sub>

*SuggestedRemedy*

Change 29.5W to 25.5W

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See 43

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.8 P 100 L 25 # 429

Barrass, Hugh

Cisco

Comment Type T Comment Status X

Figure 33-9 (the PSE state machine) doesn't seem to show that...

"The PSE may remove power at any time..."

Shouldn't this be 33.2.9.9 - that allows the PSE to remove power for overload conditions.

*SuggestedRemedy*

Change from:

The PSE may remove power at any time per Figure 33-9.

To

The PSE may remove power at any time per 33.2.9.9

Proposed Response Response Status O

CI 33 SC 33.8 P 100 L 3 # 430

Barrass, Hugh

Cisco

Comment Type T Comment Status X

I don't see how the first scenario can be called "loss of communication" since it is a failure to start communication - you can't lose what you don't have.

Furthermore the other two scenarios are the same (in terms of what cause the loss of communication - it's the response to the loss that differs).

Additionally, the systems cannot "revert" to the last acknowledged state unless there has been some change from that state - which would only happen after an acknowledged change request. A better word would be "maintain."

Finally, the preamble and the three bullets appear to be redundant when considered with the rest of the clause. It does not define loss of communications (as required for the state machine).

*SuggestedRemedy*

Commenet reference \*\*HB-04\*\*

Change

There are three scenarios which may cause a loss in management frame communication:

- 1) Management frame communication not established after power-on, resulting in systems using the power values established with Physical Layer classification
- 2) Loss in management frame communication, resulting in systems reverting to last acknowledged Data Link Layer classification power value
- 3) Loss in management frame communication or communication not established after power-on, resulting in PSE optionally power cycling the PD after 2 x TTL timeout value time period

To

Loss of management frame communication (signaled by loss\_of\_comms) occurs when no management frame is received within any 2 minute period. This is equivalent to 4 missing management frames transmitted at the 30 second interval defined in 33.7.1.

Proposed Response Response Status O

## IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.2.9 P49 L18 # 431  
Barrass, Hugh Cisco

Comment Type T Comment Status X

Comment reference \*\*HB-05\*\*

Table 33-9

The "duty cycle" method of minimizing the PD power (below 500mW) is impractical and may lead PoE devices to be seen as wasteful. Especially when compared with external power supplies that are required to have a standby power less than 500mW.

It would be very useful to define a static current that allows a PD to draw much less power without using the duty cycle method.

Other comments (reference \*\*HB-07\*\*) introduce the idea of a PD low power state that may be negotiated between the PD & PSE. The low static current can be defined to be valid only in the low power state. That way the PD will only be allowed to use the low static current if the PSE capable of measuring the smaller current or using an alternative disconnect method.

*SuggestedRemedy*

Add two rows, under item 18:

- c) LOW POWER state current 1 IIp1 mA 0 1 Relevant for 33.2.11.1.2.  
PSE removes power
- d) LOW POWER state current 2 IIp2 mA 1 2 Relevant for 33.2.11.1.2.  
PSE may power

Also add the following paragraph at the end of 33.2.11.1.2

If PD\_low\_power state has been negotiated then the PSE shall consider the DC MPS component to be present if the DC current is greater than or equal to IIp2 max. A PSE may consider the DC MPS component to be present or absent if the DC current is in the range IIp2. A PSE shall consider the DC MPS component to be absent when detects a DC current in the range IIp1. Power shall be removed from the PI when DC MPS has been absent for a duration greater than TMPDO.

Proposed Response Response Status W

frs: This needs to be reviewed.

The operating range of this system would extend from 2 mA to over 600 mA. Many system use integrating ADC to eliminate AC-coupled electrical noise. Reducing the sensed signal level further will increase noise problems.

Using the "duty cycle" approach address these concerns.

We should discuss which method is better or whether multiple options of the same function is required.

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 33.3.8 P70 L40 # 432  
Barrass, Hugh Cisco

Comment Type T Comment Status D MPS

Comment reference \*\*HB-06\*\*

In conjunction with comment reference \*\*HB-05\*\* - related changes to the PD.

*SuggestedRemedy*

Add a 3rd bullet item:

If PD\_low\_power state has been negotiated then the PD may draw a current equal or above the minimum input current (IPort\_MPSLP min) as specified in Table 33-18 instead of item a) above

Change "A PD that does not maintain the MPS components in a) and b) above" to "A PD that does not maintain the MPS components in a) and b) or b) and c) above"

Change "shall remove both components a) and b) of the MPS" to "shall remove both components a), b) and c) of the MPS"

Also change Table 33-18

Add a line:

Input current (low power) IPort\_MPSLP min mA 2 See 33.3.8

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.7.2.1 P90 L 21 # 433  
 Barrass, Hugh Cisco

Comment Type T Comment Status X

Comment reference \*\*HB-07\*\*

It is useful to define a low power mode to allow the PD to signal that it is reducing its activity to minimal level and will be reducing its power draw.

This uses one of the bits in the power source/type/priority word. It is then managed using the same negotiation mechanism as other power fields.

See comments \*\*HB-05\*\*, \*\*HB-06\*\*

*SuggestedRemedy*

Add a line in Table 33-22

2 PD low power 1 = low power mode, 0 = normal operation

Change the Reserved bit range from 3:2 to 3

Add a new subclause 33.7.2.1.x PD low power mode

For a PD, when PD low power is enabled the PD is attempting to minimize its power usage and may employ power saving features.

For a PSE this bit is always 0.

*Proposed Response* Response Status O

Cl 33 SC 33.8 P100 L 14 # 434  
 Barrass, Hugh Cisco

Comment Type T Comment Status X

Comment reference \*\*HB-08\*\*

Assuming that comment reference \*\*HB-07\*\* is accepted and that the PD low power mode is defined.

The PD should be allowed to suspend its management frame communication when it is in its low power state.

*SuggestedRemedy*

Add a sentence after "the PSE may remove power."

If PD\_low\_power state has been negotiated then the PSE and PD shall remain operational using the last acknowledged classification state.

*Proposed Response* Response Status O



IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.8 P 100 L 21 # 435  
 Barrass, Hugh Cisco

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

The latter half of this paragraph doesn't make sense:

"If ... for the remote system, a PSE may remove power, a PD shall aLLDPPoEPLocAcknowledge (30.12.1.1.10) attribute in the DTE Power via MDI classification local object class to the enumeration "loss of communications."

*SuggestedRemedy*

Change

a PSE may remove power, a PD shall aLLDPPoEPLocAcknowledge (30.12.1.1.10) attribute in the DTE Power via MDI classification local object class to the enumeration "loss of communications."

To

then the PSE shall set the aLLDPPoEPLocAcknowledge (30.12.1.1.10) attribute in the DTE Power via MDI classification local object class to the enumeration "loss of communications" and may remove power from the PD.

Proposed Response Response Status **O**

CI 33 SC 33.8 P 100 L 17 # 436  
 Barrass, Hugh Cisco

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

The loss of communication object should be asserted when loss of communication occurs. This has been defined in comment reference \*\*HB-04\*\*

The optional power removal is then defined by a further time following this.

Also, the latter half of the paragraph doesn't make sense:

"If ... for the remote system, a PSE may remove power, a PD shall aLLDPPoEPLocAcknowledge (30.12.1.1.10) attribute in the DTE Power via MDI classification local object class to the enumeration "loss of communications."

*SuggestedRemedy*

Change:

Upon loss of management frame communication, PSEs and PDs shall remain operational using the last acknowledged classification state.

If a loss of management frame communication persists past the LLDP time to live (TTL) timeout value for the remote system (see IEEE Std 802.1AB-200X, subclause 9.5.4) plus an additional delay of 2 x TTL timeout value for the remote system, a PSE may remove power, a PD shall aLLDPPoEPLocAcknowledge (30.12.1.1.10) attribute in the DTE Power via MDI classification local object class to the enumeration "loss of communications."

To

Upon loss of management frame communication, PSEs and PDs shall remain operational using the last acknowledged classification state and the PSE shall set the aLLDPPoEPLocAcknowledge (30.12.1.1.10) attribute in the DTE Power via MDI classification local object class to the enumeration "loss of communications"

If a loss of management frame communication persists for an additional delay of 2 x TTL timeout value for the remote system after the LOSS OF COMMUNICATIONS state has been entered then the PSE may remove power from the PD.

Proposed Response Response Status **O**

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.9.2.3 P102 L7 # 437

Barrass, Hugh Cisco

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

33.3.5 "Type 2 PDs shall implement both 2-Event class signature (see 33.3.5.2) and Data Link Layer classification (see 33.7)."

The PICS does not capture the mandatory requirements for a type 2 PD.

*SuggestedRemedy*

Change table to:

PDT2*	Type 2 PD	33.3.5	PD is type 2	O	Y/N
PDCL*	PD Classification	33.3.4	PD supports classification	O	Y/N
			PDT2/M		

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

This was addressed in the new PICS tables, text needs to be accepted.

Cl 33 SC 33.9.3.9 P112 L31 # 438

Barrass, Hugh Cisco

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

There are no PICS items for any of the data link layer functions.

*SuggestedRemedy*

Task the editor to add the PICS items.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

Done!

Cl 33 SC 33.7.5 P92 L41 # 439

Barrass, Hugh Cisco

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

This whole section seems to be at odds with 33.7.1 - devices shall send and receive every 30 seconds.

Furhermore a much more rapid response is required if this feature is to be used for any form of dynamic power management (e.g. allocating power for a video call during ring).

*SuggestedRemedy*

Replace the 3 paragraphs with:

An LLDPDU containing a DTE Power via MDI classification TLV shall be sent within 35 seconds of Data Link Layer classification being enabled in a PD as indicated by the variable pd\_dll\_enabled, or in a PSE as indicated by the variable pse\_dll\_enabled. See 33.2.4.4, 33.3.3.3, 33.7.6.2.

An LLDPDU containing a DTE Power via MDI classification TLV with the Acknowledge field set to either "acknowledge" or "non-acknowledge" shall be sent within 30 seconds of receipt of a valid LLDPDU containing a DTE Power via MDI classification TLV with the Requested power value field not equal to the Actual power value field. It is recommended that a PSE that can support dynamic power allocation should respond within 300 milliseconds to such a PDU in normal operation.

An LLDPDU containing a DTE Power via MDI classification TLV with the Acknowledge field set to "not part of acknowledge cycle" shall be sent within 35 seconds of receipt of a valid LLDPDU containing a DTE Power via MDI classification TLV with the Acknowledge field set to either "acknowledge" or "non-acknowledge".

Proposed Response Response Status **O**

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.7.5 P92 L 54 # 440  
 Barrass, Hugh Cisco

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

It is necessary that a PD can identify whether it has been connected to a type 2 PSE as rapid as possible when it is first connected. For example, in some applications, a PD installer may plug the PD into a socket that is far distant from the PSE and will not know whether the port is able to support a high power device until a type 2 PSE is identified. Clearly this is not a problem for L1 classification but it requires a PSE supporting L2 classification to start sending management frames as soon as possible after it has powered the PD.

Clearly this may not be possible in all circumstances - such as during a PSE reboot or if hundreds of PDs are connected simultaneously. The requirement needs to be expressed for "normal operation."

*SuggestedRemedy*

Add a paragraph at the end of 33.7.5

To allow some PD devices to indicate that they have been connected to a type 2 PSE as rapid as possible, the PSE shall start sending LLDP management frames including the appropriate power type within 5 seconds of applying power to the PD in normal operation.

Proposed Response Response Status **O**

CI 33 SC 33.2.9.9 P52 L 1 # 441  
 Vetteth, Anoop Cisco

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

Figure 33-14  
 Suggest modification to make it clearer

*SuggestedRemedy*

See attached graph

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.  
 frs: I do not see attachments.  
 I suspect this matches directions in 329.

CI 33 SC 33.3.5.1 P63 L 46 # 442  
 Vetteth, Anoop Cisco

Comment Type **TR** Comment Status **D** ez class pd

Table 33-14  
 Power corresponding to class 4 has not been updated

*SuggestedRemedy*

Change 29.5W to 25.5W

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

See 43

CI 33 SC 33.2.8.2 P46 L 36 # 443  
 Vetteth, Anoop Cisco

Comment Type **TR** Comment Status **X** class pd discuss

Table 33-6  
 Pclass has fixed values for the different classes. We changed the overload current on page 5l (lpeak) to be dependent on Ppd\_peak, Vport and Rch. We should do the same here

*SuggestedRemedy*

Use parameter "Pclass\_pd" for the values in table 33-14 page 63

Replace the table 33-6 with the following equation

$$Pclass = Vport \times [Vport - \sqrt{Vport^2 - 2 \times Rch \times Pclass\_pd}] / Rch$$

A type 1 PSE can treat Class 4 as Class 0 so I don't think we need to differentiate between type 1 and type 2 PSEs for class 4

Replace Rch in eq 33-1 with Rch/2

Proposed Response Response Status **W**

REQUIRES DISCUSSION

Author suggests replacing PSE discrete Class power levels in table with a formula based on PD Class power. In effect, this removes the fixed cable loss that has been present in the PoE specification up until this time.

This change would allow a PSE to provide a lower output power to Class 0-3 PDs if the system knows it is connected to Class D or better cabling as specified in ISO/IEC 11801:1995.

This change may ripple through specification and require additional changes.

## IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.3.7.5 P 69 L 1 # 444  
Vetteth, Anoop Cisco

Comment Type T Comment Status D Figure 33-18

Figure 33-18  
The current during overload has been defined as  $(400/350) \times (P_{port\ max}/V_{port})$

This is wrong for class 1 and class 2

## SuggestedRemedy

Change the value to  $(P_{peak}/V_{overload})$

Need to define somewhere that  $P_{peak} = (P_{class}/V_{port}) \times (400/350)$  for the class power negotiated over layer 2

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change the value to  $(P_{peak}/V_{overload})$

Add sentence to 33.3.7.4

"Note: A Type 2 PD may negotiate its Pport to less than Pclassmax via Link Layer Classification. Ppeak is reduced through Port changes affecting Pportmax."

See comments 86 & 37

CI 33 SC 33.2.3 P 32 L 49 # 445  
McCormack, Michael Texas Instruments

Comment Type E Comment Status D

The phrase "provided the PSE meets the constraints of 33.2.4" is misleading, there are other PSE shall statements in the document

## SuggestedRemedy

Strike the phrase

Proposed Response Response Status W

PROPOSED ACCEPT. frs: 33.2.4 references the PSE state diagrams. Removing the text does not change the need to support that clause.

A PSE shall implement Alternative A or Alternative B, or both.

CI 33 SC 33.2.4.4 P 35 L 45 # 446  
McCormack, Michael Texas Instruments

Comment Type E Comment Status X

Could we break the page and have the table start the beginning of the next page? The Table referenced is separated by just a few lines but is entirely on another page.

## SuggestedRemedy

Reformat the text

Proposed Response Response Status W

frs: The intent is not clear.  
See 465 for a solution to the assumed problem.

CI 33 SC 33.1.4.1 P 25 L 52 # 447  
McCormack, Michael Texas Instruments

Comment Type T Comment Status D cable

Category 5e can be bettered,

## SuggestedRemedy

Category 5e or better

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE 124

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.2.4.7 P 40 L 11 # 448  
 McCormack, Michael Texas Instruments

Comment Type T Comment Status D

What if mr\_pd\_class\_detected is 5? Not an allowed return but then why compare at line 20 if mr\_pd\_class\_detected is less than 4? I would prefer that the state machine seem somewhat consistant and either use equal and not equal or drop the first qaulification and then check if less than.

SuggestedRemedy

Remove "(mr\_pd\_class\_detected = 4)" as that is the only thing that it can be since the other vector contains all other valid return codes.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

frs: Class is determined in state CLASS\_EV2 and only classes < 4 have an exit. Therefore, the remedy would work.

However, the comment statement points out a better solution.  
 Change the CLASS\_EV2 exit condition mr\_pd\_class\_detected < 4 with  
 mr\_pd\_class\_detected != 4.

This makes the system do what is required and permits any other value for the variable.

Cl 33C SC 33C P 121 L 1 # 449  
 McCormack, Michael Texas Instruments

Comment Type TR Comment Status D

The 802.3 Workign Group dropped support for test procedures, we should also.

SuggestedRemedy

Remove Annex 33C

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

see 243

Cl 33 SC 33.7.4 P 92 L 54 # 450  
 McCormack, Michael Texas Instruments

Comment Type TR Comment Status X

Everyone who will do in depth power management will want to know precisely, for at least son set of device, what PD is on the link. Please add a TLV to allow the identification of the PD, it can be a manufacturer assigned code. This should also include fields that indetify the averag power, the maximum power, the duty cycle of the maximum power, the sleep mode power and an indication whether or not the same devices of this type could synchronize thier high power states.

SuggestedRemedy

Add a new optional TLV with fields:

- Device ID - manufacture specific device ID value
- Maximum power draw - .1W increments
- Average power draw - .1W increments
- Sleep mode power - .1W increments
- Maximum power duty cycle - ratio of bits over 255
- Synchronization - boolean

Proposed Response Response Status O

Cl 33 SC 33.3.7 P 66 L 23 # 451  
 Jones, Chad Cisco

Comment Type E Comment Status D

Table 33-17, item 4.

Adding the variable Icable has made our life easier by only having to change the number in or spot but it has made the document harder to read. I got here from a reference on page 58, lir 3 which says: "The maximum power a PD may expect to draw from a PSE is PPort max as defined in Table 33-17." I go to T33-17 and I find Pport = Icable \* Vportmin. But where do I find Icable?

SuggestedRemedy

Add: "Also, Table 33-1" under "See 33.3.7.2" in additionally information for Item 4 Table 33-17

Proposed Response Response Status W

PROPOSED ACCEPT.

## IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.3.7 P 66 L 38 # 452  
Jones, Chad Cisco

Comment Type E Comment Status D Vport\_static  
Table 33-17 Item 7

Vport\_staticmin is undefined. I searched the doc and only find this one instance of the variab

*SuggestedRemedy*

I think this is the min value of Table 33-9, Item 1.

Add: "Also, Table 33-9, Item 1" across from Vport\_staticmin in the additional information column for Table 33-17, Item 7.

Proposed Response Response Status W

PROPOSED REJECT.

See comment 86

Cl 33 SC 33.3.5.2 P 64 L 14 # 453  
Jones, Chad Cisco

Comment Type E Comment Status D ez class pd  
Typo in heading:

"33.3.5.2 IPD 2-Event class signature" - stray l in front of PD.

*SuggestedRemedy*

change to: "33.3.5.2 PD 2-Event class signature"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See 154

Cl 33 SC 33.3.5.2 P 64 L 20 # 454  
Jones, Chad Cisco

Comment Type E Comment Status D ez class pd  
"The Figure 33-17 state diagram specifies the externally observable behavior of the PD."

This is a completely superfluous sentence that is already stated in the state diagram section c the document.

*SuggestedRemedy*

Strike the sentence.

Proposed Response Response Status W

PROPOSED 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 33.2.8 P 44 L 53 # 455  
Jones, Chad Cisco

Comment Type TR Comment Status D class pse

"If a PSE successfully completes detection of a PD, but the PSE fails to complete classificatio of a PD, then a Type 1 PSE shall assign the PD to Class 0; the operation of a Type 2 PSE is implementation dependent."

We are making the same mistake that we made in AF all over again. The reason we couldn't use Class 4 by itself is because we allowed the PSE to power a poorly behaved PD, and we a doing it again here. The proper way to future proof the standard is define this as a non-power state.

Additionally, classification is no longer optional for Type 2 PSEs; you have to complete some sort of classification to complete the whole discovery process for Type 2 devices. If classification has failed, discovery has failed. We certainly don't let a device that has failed discovery get power anyway - and certainly not 30W!

*SuggestedRemedy*

Operation for Type 1 PSEs is grandfathered in and cannot be corrected but it can be fixed for the Type 2 PSE.

Change: "the operation of a Type 2 PSE is implementation dependent."

to: "the Type 2 PSE shall restart the Detection Cycle"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

The proposed change aligns text with existing PSE state machine, however PSE should retur to the IDLE state prior to detection.

Change: "the operation of a Type 2 PSE is implementation dependent."

to: "the Type 2 PSE shall return to the IDLE state."

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.2.8.2 P 46 L 16 # 456  
 Jones, Chad Cisco

Comment Type TR Comment Status D class pd

"If any measured IClass is equal to or greater than IClass\_LIM min as defined in Table 33-8, the PSE shall classify the PD as Class 4."

Same as previous comment:

We are making the same mistake that we made in AF all over again. The reason we couldn't use Class 4 by itself is because we allowed the PSE to power a poorly behaved PD, and we are doing it again here. The proper way to future proof the standard is define this as a non-power state.

Additionally, classification is no longer optional for Type 2 PSEs; you have to complete some sort of classification to complete the whole discovery process for Type 2 devices. If classification has failed, discovery has failed.

SuggestedRemedy

Change: "If any measured IClass is equal to or greater than IClass\_LIM min as defined in Table 33-8, the PSE shall classify the PD as Class 4."

to: "If any measured IClass is equal to or greater than IClass\_LIM min as defined in Table 33-8 the PSE shall restart the Detection Cycle by allowing the voltage at the PI to drop below Vmarkmin."

Proposed Response Response Status W

REQUIRES DISCUSSION.

PROPOSED ACCEPT IN PRINCIPLE.

The spec is in error and needs editing, however....

The .af spec says "If the measured Iclass is equal to or greater than 51mA, the PSE shall classify the PD as Class 0." (.af spec 33.2.7.2)

We can't change .af behavior (unless we introduce implementation specific choices).

Type 1 PSEs report Class 0

Type 2 PSEs report ...

Either:

- A. Class 0 or
- B. Class 4 or
- C. Don't power PD or
- C. Implementation specific

Note: If PSE treats as class 4, it may not be able to properly generate the 2-event classification because the PSE may go into current limit. Therefore, treating as class 4 is a non-starter.

Implementing a different response than .af creates minor added complexity in the PSE. This would give argument to treating as a class 0.

Change text to:

"If any measured IClass is equal to or greater than IClass\_LIM min as defined in Table 33-8, the PSE shall classify the PD as Class 0."

CI 33 SC 33.2.8 P 45 L 12 # 457  
 Jones, Chad Cisco

Comment Type TR Comment Status X class pd discuss

Table 33-5

The task force should encourage compliant behavior and discourage noncompliant behavior. Presently, the draft allows PSEs to power PDs as class 4 even if it fails classification. This is a loophole for dumb PDs and even allows dumb PSEs.

If the task force permits PSEs to power PDs that do not present a valid class then the task force should similarly permit PSEs to power PDs that ask for higher power than presented on L1.

SuggestedRemedy

Change "Type 2 1-Event PD allowed?" entry in Table 33-5 to Yes

Proposed Response Response Status W

Requires group discussion.

CI 30 SC 30.12 P 16 L 41 # 458  
 Geoff, Thompson Nortel

Comment Type E Comment Status X

I don't think I like the naming convention for the attributes and the resulting order that they appear in the standard. I believe it makes it difficult to understand the structure and flow of information.

The current naming convention structure seems to be

[o/a][LLDP]{PoEP}[Null/PLoc/PRem][Null/Requested/Actual][ParameterName]

This seems to not group parameters together as they should be for (a) easier understanding and (b) sharing of syntax (c) sharing of root names of attributes and their containing objects

SuggestedRemedy

Change to the form of:

[o/a][LLDP]{PoEP}[Loc/Rem][ParameterName][Null/Requested/Actual]

and rearrange attributes within an object so that root names are grouped together.

(If this is turned down, and I hope that it isn't then references should be put in to link other attributes of the related request/response set.)

(This will also require some editorial clean up in the attributes for consistency)

Proposed Response Response Status W

CommentType empty, set to E as default

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.2 P 27 L 3 # 459  
 Geoff, Thompson Nortel

Comment Type E Comment Status D

The text:  
 "The PSE's main functions are to search the link section for a PD, supply power to the link section (only if a PD is detected), monitor the power on the link section, and scale power back to the detect level when power is no longer requested or required."  
 needs a little tuning up for accuracy

SuggestedRemedy

Change to:  
 "The PSE's main functions are to search the link section for a PD, supply power to the link section if various requirements are met, monitor the power on the link section, and scale power back to the detect level when power is no longer requested or required."

(The various requirements would be: (a) a qualified PD is detected, (b) power is requested (c) PSE management decides to supply power.)

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. CommentType empty, set to E as default  
 need help to wordsmith the proposed text.

CI 33 SC 33.2.8 P 44 L 30 # 460  
 Geoff, Thompson Nortel

Comment Type E Comment Status D class pse

The text:  
 "Physical Layer classification occurs before power-on when the PSE asserts a voltage onto the PI..."  
 is confusing as just what is powered on and what is not.

SuggestedRemedy

change text to:  
 "Physical Layer classification occurs before a PSE supplies power to a PD when the PSE asserts a voltage onto the PI..."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. CommentType empty, set to E as default  
 Agree to confusion in text, however suggested remedy is still unclear.

Change text as follows:

"Physical Layer classification occurs before the PSE enters the POWER\_ON state. The PSE asserts a voltage onto the PI..."

CI 30 SC 30.2.5 P 15 L 41 # 461  
 Geoff, Thompson Nortel

Comment Type E Comment Status X

Table break in wrong place

SuggestedRemedy

Table should have page break between objects, one attribute further down.

Proposed Response Response Status O

CI 30 SC 30.12.1.1.10 P 18 L 54 # 462  
 Geoff, Thompson Nortel

Comment Type E Comment Status X

"non-acknowledge" BEHAVIOR is not clear and insufficient

SuggestedRemedy

Change to: "The change request is acknowledged as received but the request for change is denied."

Proposed Response Response Status O

CI 33 SC 33.1.1 P 23 L 52 # 463  
 Geoff, Thompson Nortel

Comment Type E Comment Status D cable

Change the text for full clarity from:  
 "Type 2 operation over other cabling systems is beyond the scope of the clause."

SuggestedRemedy

To: "Type 2 operation over other cabling systems which meet their data transmission requirements is beyond the scope of the clause."

Proposed Response Response Status W

PROPOSED REJECT.

Extra text doesn't change the implication of the sentence.



IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.1.4.2 P 26 L 6 # 464  
 Geoff, Thompson Nortel

Comment Type E Comment Status D cable

The text: "Type 2 operation requires a 10°C reduction in the maximum ambient operating temperature of the cable (see ISO/IEC TR 29125)." is not true except at maximum current.

SuggestedRemedy

Change text to read:  
 "Type 2 operation at up to maximum current requires a 10°C reduction in the maximum ambie operating temperature of the cable (see ISO/IEC TR 29125)."  
 -OR-  
 "Type 2 wort case operation requires a 10°C reduction in the maximum ambient operating temperature of the cable (see ISO/IEC TR 29125)."

Proposed Response Response Status W

PROPOSED REJECT.

The whole spec is written around what happens at the maximum current. Are we to add derating curves for operation not at maximum?

CI 33 SC 33.2.4.5 P 35 L 50 # 465  
 Geoff, Thompson Nortel

Comment Type E Comment Status D

Frame editing and pagination problem.  
 Table 33-3 should appear immediately after line 47 and before the header and text of 33.2.4.5

SuggestedRemedy

Put a page break immediately in front of heading for 33.2.4.5 or a "keep together" command that does the same thing

Proposed Response Response Status W

PROPOSED ACCEPT. Same as 302 use this solution.

CI 33 SC 33.2.4.7 P 38 L 8 # 466  
 Geoff, Thompson Nortel

Comment Type E Comment Status D

It looks like the size of Figure 33-9 is such that it will guarantee that the heading "33.2.4.7 Sta Diagrams" and Figure 33-9 will inevitably be on separate pages

SuggestedRemedy

Insert a page break immediately before: "33.2.4.7 State Diagrams"  
 AND  
 Reduce the size of Figure 33-9 such that the heading and the figure can fit on a single page.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 00 SC 00 P L # 467  
 Geoff, Thompson Nortel

Comment Type ER Comment Status D

The current ballot claims that it is referenced against P802.3ay Draft 2.1. As of the date of the close of this ballot, 2.1 is not longer the current draft

SuggestedRemedy

The next draft should be referenced against the draft of P802.3ay that is current at the time th next ballot is issued. Any changes to the P802.3at draft that are a result of changes to the P802.3ay since D2.1 should be marked with an editor's note saying as much.

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE P802.3at D3.0 PoEplus comments

CI 99 SC 99 P L # 468  
 Geoff, Thompson Nortel

Comment Type ER Comment Status D

This comment is against the assertions of the Working Group Ballot Announcement letter. The "announcement" that: "Due to the extent of the changes to Clause 33, and its associated Annexes, contained in this amendment it has been agreed with staff that they will be presented as replacements rather than strikeout and underscore as would be normal if the changes were less extensive." is not acceptable to me. I am at a complete loss as to any rationale why the opinion of staff (no offense, but it is not their turf) has anything to do the rationale as to whether or not the Working Group is entitled to ballot the comparison/change text vs. having to ballot the entire proposal, though it were new text, with the comparison text only available as a reference document.

SuggestedRemedy

This decision should have been made by the Working Group (in the ballot motion) or perhaps by a ruling of the Working Group Chair (in WG session, before the WG).

The decision of appropriate presentation should be made all over again by an appropriate decision of all concerned parties (editorial staff gets to be included this time) when the document is put forth for Sponsor Ballot. This means that it has to be part of the motion put before the EC.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This comment mixes two issues. Issue 1 is if the final document will be published as a set of changes against the existing Clause 33 - or as a replacement of the existing Clause 33. Issue 2 is if the Working Group is entitled to see a compare of Clause 33 in the draft against the existing Clause 33.

Issue 1 - The Task Force decided that the changes being made to Clause 33 were so extensive that it would be clearer to supply replacement text rather than a very large number of changes. This will also assist when this draft is folded back in to the base standard. This is in fact a change instruction - it just happens to be a change instruction with a large scope. A similar approach was taken in IEEE 802.3ay where Clause 43 is deleted by a single instruction rather than a red line of the entire clause. Staff was consulted to ensure that they would not object to the use of the instruction replace in this case.

Issue 2 - The Working Group is indeed entitled to see a compare of Clause 33 in the IEEE P802.3at draft against the existing Clause, and this was provided as part of the balloting package.

CI 33 SC 33 P23 L1 # 469  
 Geoff, Thompson Nortel

Comment Type ER Comment Status D

Given the inadequacy of the compare documents referenced in the cover letter, the balloting instruction, the referenced documents which are: "...to assist in your review compare documents..."  
 The balloting instruction to: "Please DO NOT submit comment against the above documents" is completely inappropriate!  
 A editorial instruction that says: "Replace Clause 33:" (PDF Page 1, line 1) is of no use "to assist..."

SuggestedRemedy

Where the draft switches modes from editorial instructions to major section replacement (e.g. pg 23, line 1) insert an editorial instruction that says: Editorial note, to be removed prior to publication. The precise delete/insert instructions against what is taken as the base standard (P802.3ay/D2.1 draft of 802.3REV expected to be published as Std 802.3-2008) can be found in a compare document which can be accessed at: [http://www.ieee802.org/3/at/private/D3.0/P802d3at\\_D3p0-8023\\_33\\_CMP.pdf](http://www.ieee802.org/3/at/private/D3.0/P802d3at_D3p0-8023_33_CMP.pdf) (This will be even more important in Sponsor Ballot where you have less control over the packaging of the ballot material.)

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 01 SC 1.4 P13 L30 # 470  
 Geoff, Thompson Nortel

Comment Type ER Comment Status X power levels

The text: "...for greater than IEEE Std 802.3T-2005 power levels." is not appropriate. It will be difficult for the normal user of the resulting standard to have access to this information. There is no need to make things that difficult for a normal user.

SuggestedRemedy

Change to: "for greater than the power levels specified in Table 33-6, class 3."

Proposed Response Response Status W

274, 275, 404

Probably the best solution.

IEEE P802.3at D3.0 PoEplus comments

Cl 30 SC 30.2.5 P16 L36 # 471  
 Geoff, Thompson Nortel

Comment Type ER Comment Status X

Duplicate entry in table on last 2 lines  
 Didn't look to see if it was just a duplicate or whther something was left out.  
 (presumably a cut and paste error.)

SuggestedRemedy

Delete if just a duplicate  
 Correct if it is a place holder for a missing attribute

Proposed Response Response Status O

Cl 30 SC 30.12.1.1.3 P17 L22 # 472  
 Geoff, Thompson Nortel

Comment Type ER Comment Status X

There seems to be something wrong in the syntax vs. the behaviour.  
 You are putting in a "request" but the syntax is not that of a request but rather what the state  
 already is (What is the meaning of "is"? It is what the state is currently "being", not what is  
 being requested.)

SuggestedRemedy

Remove the term "being" from the syntax so that it can be used by both request and response.  
 E.g.: "A PD powered locally only", yields:  
 REQUEST: A PD powered locally only  
 RESPONSE: A PD powered locally only"

Proposed Response Response Status O

Cl 30 SC 30.12.1.1.10 P19 L5 # 473  
 Geoff, Thompson Nortel

Comment Type ER Comment Status X

Grammar, currently says:  
 "...response to a requested changes to the power value.;"

SuggestedRemedy

Change to one of:  
 "...response to a requested change to the power value.;"  
 -OR-  
 "...response to requested changes to the power value.;"

Proposed Response Response Status O

Cl 33 SC 33.1.4 P25 L52 # 474  
 Geoff, Thompson Nortel

Comment Type ER Comment Status D cable

There is no such thing as Category 5e components specified in 11801:2002.  
 the term "5e" is a TIA term, not an ISO/IEC term

SuggestedRemedy

Change text to read:  
 "...shall consist of Category 5e components as specified in ANSI/TIA/EIA-568-B.2 and  
 Category 5 components as specified in ISO/IEC 11801:2002.

Proposed Response Response Status W

PROPOSED ACCEPT.

OBE 519

Cl 33 SC 33.1.4.2 P26 L10 # 475  
 Geoff, Thompson Nortel

Comment Type ER Comment Status X cable

It is an insult to us to call non-compliant systems "these alternate PoE system implementation

SuggestedRemedy

Change text to read: "these alternate power system implementations."

Proposed Response Response Status W

resolve with 514; same sentiment, different words

Cl 33 SC 33.2.8 P44 L36 # 476  
 Geoff, Thompson Nortel

Comment Type ER Comment Status D ez class pse

The text:  
 "With Data Link Layer classification, the PSE and PD communicate using the Data Link Layer  
 Protocol (see 33.7) after the PD is powered."  
 ...is not technically correct because because LLDP can be established as soon as data  
 transmission is enabled without regard to the state of the PSE/PD elements. Also powering th  
 PD does not guarantee that LLDP can come up. See 33.2.5 para 3.

SuggestedRemedy

Change to:  
 "With Data Link Layer classification, the PSE and PD communicate using the Data Link Layer  
 Protocol (see 33.7) as soon as the data link is established."

Proposed Response Response Status W

PROPOSED ACCEPT.

## IEEE P802.3at D3.0 PoEplus comments

Cl 30 SC 30.12.1.1.1 P19 L12 # 477  
Geoff, Thompson Nortel

Comment Type T Comment Status X

Question:

Isn't the rate of LLDP frames independent of what the link speed is?

If so, then the maximum counter increment rate is independent of the link rate

*SuggestedRemedy*

Change increment rate to:

"This counter has a maximum increment rate of 1 count per second."

-OR-

"This counter has a maximum increment rate of 1 count per second independent of link rate."

Proposed Response Response Status O

Cl 01 SC 1.3 P13 L11 # 478  
Geoff, Thompson Nortel

Comment Type TR Comment Status D cable

The text: "Draft document number ISO/IEC JTC 1/SC 25 N XXXX.X."

is inappropriate and insufficiently complete for a document to go to Working Group Ballot.

*SuggestedRemedy*

There are several appropriate choices to remedy this, among them are:

- Admit that the document was not complete and thus, by rule, not qualified to go to Working Group Ballot and, therefore, withdraw the draft from Working Group Ballot until it is complete, then submit it again to 802.3 for WG Ballot.

- Provide an appropriately mature outside reference and access to copies of it so that the balloting group can judge the technical information.

- Drop the reference, establish the relevant parameters and their validity (with appropriate documentation) within 802.3 and then use the home grown numbers.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See ISO/IEC JTC 1/SC 25/WG 3 Liaison report to IEEE 802.3 on telecommunications cabling to support IEEE 802.3at PoEP

approved by SC 25/WG 3 (Barcelona 2008-02-22) announcing approval of new work item proposal (NWIP) for developing technical report ISO/IEC TR 29125 "Telecommunications cabling guidelines for remote powering of data terminal equipment".

see 364, 510

Cl 30 SC 30.12.1.1.1 P17 L3 # 479  
Geoff, Thompson Nortel

Comment Type TR Comment Status X

The term or diagram being referred to by the text:

"...among the subordinate managed objects of the containing object."

is not at all obvious to me.

I find no text or diagram that gives me any guidance whatsoever as to what would be an appropriate object containment structure for a device of this type. It seems to me that some commonality of object containment is appropriate for interoperable systems.

*SuggestedRemedy*

Provide a reference containment diagram (or text) and provide a pointer to it from this text.

Proposed Response Response Status O

Cl 33 SC 33.2 P27 L10 # 480  
Geoff, Thompson Nortel

Comment Type TR Comment Status X

The text:

"A PSE is electrically specified at the point of the physical connection to the cabling.

Characteristics, such as the losses due to overvoltage protection circuits, or power supply inefficiencies, after the PI connector are not accounted for in this specification."

...is nonsensical. None of the items mentioned are appropriately placed "after the PI connecto the only thing that is appropriate after the PI would be cabling and the PD.

I believe that "overvoltage protection circuits, or power supply inefficiencies" are to be include within the PSE spec and belong on the PSE side of the PI

*SuggestedRemedy*

Delete the second sentence.

Proposed Response Response Status W

125

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.2.1 P 30 L 7 # 481  
 Geoff, Thompson Nortel

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

This comment relates to Figure 33-6, Alternative A.  
 The through connections shown on the midspan on pins 4/5 and 7/8 are out of scope for this standard and are not compatible with many existing compliant implementations of legacy midspans.

*SuggestedRemedy*

Replace the shown through connections with boxes which are labeled "Out of Scope"

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE. frs: A note exists on p27: "NOTE-Figure 33-4, Figure 33-5, Figure 33-6, and Figure 33-7 are for illustrative purposes only."

The figures aid the reader because they provide information on how something may be done.

CI 33 SC 33.2.9 P 48 L 15 # 482  
 Geoff, Thompson Nortel

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

Table 33-9, also line 20 and other resulting places in the draft.  
 The proposed 50 volt minimum value, while admittedly allowing for more delivered power to the PD, is a significant hit in system cost relative to the carefully chosen equivalent value of Vport for 802.3af.  
 The new voltage means that PSEs can no longer be operated directly from battery systems (4 volt nominal) commonly found in telephone installations and DC communications UPS system. Also, line operated power supplies with 48 volt nominal are a commonly available commodity product whose cost is driven by markets larger than that of PoE+. The new voltage level would require new power supplies for both boost conversion from 48 Vnom and from line voltage to the input side requirements of the proposed PoE+ PSEs. This will be a significant cost handicap, additional energy inefficiency and specialty supply handicap to implementation as well as negative hit to the five criteria.

*SuggestedRemedy*

Change Vport Min for PSE Type 2 operation to 44 volts.  
 Make the requisite changes to the rest of the draft including delivered power to the PD that would result from this change.

Proposed Response Response Status **W**

frs: This should be discussed.

During the May 2006 Interim, the IEEE 802.3at task force voted to adopt 50 V as the minimum Vport.  
 Y: 37 N:0 A: 1  
 This was done after extensive evaluation of the system tradeoffs.

CI 30 SC 30.9 P L # 483  
 Geoff, Thompson Nortel

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

It appears that the draft is not complete with respect to appropriate changes to the existing management clauses in 30.9, 30.10 and their respect annexes.  
 It looks like there was no attempt whatsoever to consider the impact of PoE+ on the existing management. For example, there has been no attribute nor enumeration added within 30.9.1 indicate whether the PSE is a Type 1 or Type 2 PSE. Also, (at an absolute minimum) P802.3at has moved a number of the references to clause 33 in the current clause 30, these should have been brought up to date.  
 Further, the new attributes created for LLDP of PoE+ don't seem to have particularly aligned to the existing attributes in terms of behaviour or syntax.

*SuggestedRemedy*

Redo the proposed new management attributes for maximum alignment with the existing Layer Management and amend the existing Layer Management for PoE so that it can appropriately cover both PoE and PoE Plus.

Proposed Response Response Status **O**

CI 00 SC 00 P L # 484  
 Geoff, Thompson Nortel

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

The text provided for management via LLDP is not complete. I recognize that the IETF is no longer willing to do the SMNP and 802.3 will be doing that job.  
 As far as I know this change of situation has not lead to any change in requirements for 802.3 development projects, thus for the P802.3at draft to be complete, it needs to include the management material normally included in Annex 30A (OID registration arcs) and Annex 30B (enumerated values for syntax).

*SuggestedRemedy*

Add appropriate material for Annex A and Annex B  
 Since the WG Ballot was conducted (inappropriately) on an incomplete draft the Working Group Ballot should be reinitiated or (at a minimum) the recirculation should have an extended period AND open the entire draft for comment.

Proposed Response Response Status **W**

reviewed

IEEE P802.3at D3.0 PoEplus comments

CI 01 SC 1.4 P13 L 28 # 485  
 Ganga, Ilango Intel

Comment Type E Comment Status D power levels

Replace "IEEE Std 802.3-2005" to "IEEE 802.3", so we do not have to change this for every revision.

SuggestedRemedy

Type 1: A PSE or PD that is designed for IEEE 802.3 power levels

Type 2: A PSE or PD that is designed for greater than IEEE 802.3 power levels

Proposed Response Response Status W

PROPOSED REJECT.

Solution doesn't fix the problem.

See 274, 275, 404

CI 30 SC 30.2.5 P16 L 36 # 486  
 Ganga, Ilango Intel

Comment Type E Comment Status X

Repetition of aLLDPPoEPRemAcknowledge in table 30-5a

SuggestedRemedy

Delete last row from table 30-5a on page 16

Proposed Response Response Status O

CI 33 SC 33.9.3.2 P103 L 26 # 487  
 Ganga, Ilango Intel

Comment Type E Comment Status D

Add Figure 33-10 to the following:

In accordance with state diagrams shown in Figure 33-9 and Figure 33-11

SuggestedRemedy

In accordance with state diagrams shown in Figure 33-9, Figure 33-10, and Figure 33-11

Proposed Response Response Status W

PROPOSED ACCEPT.

Captured with the updated PICS.

CI 30 SC 30.12.2.1.9 P21 L 6 # 488  
 Ganga, Ilango Intel

Comment Type ER Comment Status X

This attribute returns the PD power value of the remote system, hence change the following sentence as suggested

"where X is the decimal value of aLLDPPoEPLocActualPDPowerValue"

SuggestedRemedy

Change to:

where X is the decimal value of aLLDPPoEPRemActualPDPowerValue

Proposed Response Response Status O

CI 33 SC 33.1.4.1 P25 L 52 # 489  
 Ganga, Ilango Intel

Comment Type ER Comment Status D

PICS missing for 33.1.4.1 Type 2 cabling requirement

SuggestedRemedy

Add PICS for 33.1.4.1

Proposed Response Response Status W

PROPOSED ACCEPT.

This is covered in the new PICS COM2 proposed to the editor.

CI 33 SC 33.2.4.4 P35 L 47 # 490  
 Ganga, Ilango Intel

Comment Type ER Comment Status D

PICS missing for PSE shall meet at least one allowable variable..

SuggestedRemedy

Add corresponding PICS

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.9.3.2 P 104 L 4 # 491

Ganga, Ilango

Intel

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

Incorrect subclause reference for PSE17 through 57.  
Also missing hyperlinks for subclause references for the following:

PD1-33  
EL1-18  
PSEEL1-14

And all the subsequence PICS till the end of Clause 33

*SuggestedRemedy*

Fix the subclause references and/or hyperlinks for all the PICS in Clause 33 starting PSE17

Proposed Response Response Status **W**

PROPOSED ACCEPT.

Updated/new PICS tables updated all references.

Cl 33 SC 33.7 P 89 L 1 # 492

Ganga, Ilango

Intel

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

Missing PICS for 33.7 Data Link layer classification requirements  
Also missing PICS for requirements in 33.8

*SuggestedRemedy*

Add PICS corresponding to 33.7 and 33.8

Proposed Response Response Status **O**

Cl 33 SC 33.7 P 89 L 8 # 493

Ganga, Ilango

Intel

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

Data link layer classification requirement:

"Type 2 PDs that require more than 12.95 W must support  
Data Link Layer classification (see 33.3.5).Data Link Layer classification is optional for all othe  
devices."

Is this "must support" or "shall support"?

*SuggestedRemedy*

Change this to, "shall", if it is a requirement for Type 2 PDs more than...

Proposed Response Response Status **O**

Cl 99 SC 99 P 1 L 34 # 494

Diab, Wael

Broadcom

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

Please update the Frontmatter to match the generic FM provided to 802.3 Task Forces.  
Specifically, please update the expiration information.

*SuggestedRemedy*

Recomended expiration reads: "This draft expires 6 months after the date of publication or  
when the next version is published, whichever comes first."

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CommentType empty, set to E as default

Cl 00 SC 00 P 3 L # 495

Diab, Wael

Broadcom

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

Please update the Frontmatter to match the generic FM provided to 802.3 Task Forces.

*SuggestedRemedy*

Generic FM can be found in the tools area or requested from the WG C or VC.

Proposed Response Response Status **W**

Clause was set to '03'. Clause 03 not open for balloting, set to 00 to facilitate the import.

Reviewed

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.1.1 P 23 L 40 # 496  
 Diab, Wael Broadcom  
 Comment Type E Comment Status X  
 Please change "The following are the objectives of Power via MDI:" to "The following are objectives of Power via MDI:" yo differentiate from .3af and .3at project objectives  
 SuggestedRemedy  
 See comment  
 Proposed Response Response Status W  
 comment wants to remove 'the' from the sentence. How does this differentiate af from at?

Cl 33 SC 33.1.1 P 24 L 1 # 499  
 Diab, Wael Broadcom  
 Comment Type T Comment Status D  
 Please delete objective (d). I am not sure that it adds any value and/or that it is entirely accurate at this point.  
 SuggestedRemedy  
 See comment  
 Proposed Response Response Status W  
 PROPOSED REJECT.

Cl 01 SC 01.3 P 13 L 7 # 497  
 Diab, Wael Broadcom  
 Comment Type E Comment Status D ez  
 The editor's note is confusing. The only thing the note should state is that the reference will be updated upon publication of the TR  
 SuggestedRemedy  
 Please delete the language regarding the vote on the TR. Retain language to point to the TR name  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 see 106

Cl 33 SC 33.1.4 P 25 L 44 # 500  
 Diab, Wael Broadcom  
 Comment Type T Comment Status D cable  
 Table 33-1  
 The cabling type in this table is ambiguous.  
 SuggestedRemedy  
 Please use the nomenclature in Clause 1 for Cat 3 (see 1.4.89). Also, pls add a footnote to Table 33-1 indicating where Cat 3 and Class D are defined so there is no ambiguity.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE 518

Cl 33 SC 33.7.8 P 98 L 29 # 498  
 Diab, Wael Broadcom  
 Comment Type ER Comment Status X  
 This section is informative  
 SuggestedRemedy  
 Please label as so in the section heading  
 Proposed Response Response Status O

Cl 33 SC 33.1.4.1 P 26 L 1 # 501  
 Diab, Wael Broadcom  
 Comment Type TR Comment Status D cable  
 I am not sure what value the note is adding here. We are either saying that the cabling meets (a) ISO Class D 1995 AND TIA 568-B.2, in which case the note is redundant OR (b) ISO Class D 1995 and the note there is informative about the TIA 5e cabling  
 SuggestedRemedy  
 If we are doing (b) then please delete the TIA reference in the body of the section and retain the NOTE. If we are doing (a) then please delete the note.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE 124



IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.2.2 P 27 L 28 # 502  
Diab, Wael Broadcom

Comment Type TR Comment Status D

The BLW issue with 100BASE-TX was avoided in 802.3af by disallowing Alternative A solutions. I support work to allow 1000BASE-T and Alternative A 100BASE-TX to work on condition that it does not compromise the integrity of the channel or modify the characteristics the signal that the PHY sees at its receive MDI from the link partner.

SuggestedRemedy

Either disallow Alternative A midspans or show that the constraints placed on an Alternative A midspan yield a channel and receive characteristics that is identical to that without a midspan for a 100BASE-TX link or a 1000BASE-T link.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE. frs: Suggest referencing section 33.4.8.2, p81 for alternative-A midspans.

Cl 33 SC 33.1.4.2 P 26 L 9 # 503  
Diab, Wael Broadcom

Comment Type TR Comment Status D cable

This note has some inaccuracy and does not add any value. Moreover, it is restructuring in terms of what implementations out of the scope can and cannot do. For instance it talks about cable not cabling systems which would include connectors. Furthermore, I would expect the TR be referenced to discuss the parameters under which the derating points were given.

SuggestedRemedy

Please delete the NOTE.

Proposed Response Response Status O

507, 508

Cl 00 SC 00 P L # 504  
Diab, Wael Broadcom

Comment Type TR Comment Status X

Please resolve where the TLVs for 802.3at will reside. Will it be in 802.1, 802.3 at or somewhere else

SuggestedRemedy

Please see comment

Proposed Response Response Status W

reviewed

Cl 33 SC 33.7.6.5 P 96 L 10 # 505  
Diab, Wael Broadcom

Comment Type TR Comment Status X

PSE variables incorrectly labeled to PD

SuggestedRemedy

Please correct variable names to PSE

Proposed Response Response Status O

Cl 33 SC 33.7.6.5 P 96 L 16 # 506  
Diab, Wael Broadcom

Comment Type TR Comment Status X

Looks like PSE state diagram has missing arrows

SuggestedRemedy

PSE diagram should be identical to PD with modified variable settings. Please adjust per resolutions from Ohio meeting

Proposed Response Response Status O

Cl 33 SC 33.1.4.1 P 26 L 12 # 507  
DiMinico, Chris MC Communications

Comment Type E Comment Status D cable

The information in the note is provided in 33.1.4.1.

SuggestedRemedy

Delete Note

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE 124



IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.2.9.7 P51 L 10 # 513  
 Law, David 3Com  
 Comment Type E Comment Status D  
 Any reason why this equation isn't numbered.  
 SuggestedRemedy  
 See comment.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 frs: This is related to 315.  
 Assume the commentor would like a number for this equation.

Cl 33 SC 33.1.4.2 P26 L 10 # 514  
 Law, David 3Com  
 Comment Type ER Comment Status D cable  
 We don't use the term PoE in this standard.  
 SuggestedRemedy  
 Change '.. and PoE system ..' to read '.. and DTE Power Via MDI system ..' and '.. alternate PoE system ..' to read '.. alternate DTE Power Via MDI system ..'.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 If not OBE by 507

Cl 00 SC 00 P L # 515  
 Law, David 3Com  
 Comment Type ER Comment Status D  
 We should state in the reference to Figures 33-4 through 33-7 that these are illustrative rather than have a note elsewhere.  
 SuggestedRemedy  
 [1] Change the text 'See Figure 33-4, Figure 33-5, Figure 33-6, and Figure 33-7.' to read 'The location of Alternative A and Alternative B Endpoint PSE and Midspan PSEs are illustrated in Figure 33-4, Figure 33-5, Figure 33-6, and Figure 33-7.'  
 [2] Delete the note on line 26 that reads 'NOTE-Figure 33-4, Figure 33-5, Figure 33-6, and Figure 33-7 are for illustrative purposes only.'  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 33 SC 33.7.2.1 P89 L 42 # 516  
 Law, David 3Com  
 Comment Type T Comment Status X  
 While actual 'power type', 'power source' and 'power priority' is useful for the far end to use in determining if to accept or deny a request I can't see any value in supplying a requested 'power type', 'power source' and 'power priority'. This is status information and not something that will change as a result of the arbitration. For example if a device is a Type 1 PD it can request to change this to something else, the same is true for a PSE operating from a primary source.  
 SuggestedRemedy  
 Remove requested 'power type', 'power source' and 'power priority' from the TLV and the MIB  
 Proposed Response Response Status O

Cl 33 SC 33.1.4 P25 L 43 # 517  
 Law, David 3Com  
 Comment Type TR Comment Status D cable  
 I believe that a Type 1 and Type 2 system are only defined by the maximum DC cable current. The two other parameters provided in Table 33-1, 'Channel DC loop resistance' and 'Cable type' don't define Type 1 and Type 2, instead they are requirements to support Type 1 and Type 2 operation.  
 SuggestedRemedy  
 Delete the 'Channel DC loop resistance' and 'Cable type' rows from Table 33-1 as these aren't parameters that define Type but are instead requirements.  
 If there is a desire to summarize the cabling requirements for both Type 1 and Type 2 operation please create a new Table 33-2 and include it in subclause 33.1.4.1 which would have to be changed to be titled 'Cabling requirements'. If this is done more accurate description of cable type will be required.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 Opposite of 518, which is accept  
 320, 518, 28, 500, 413

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.1.4 P 25 L 43 # 518  
 Law, David 3Com

Comment Type TR Comment Status D cable

If my other comment to delete the rows 'Channel DC loop resistance' and 'Cable type' from Table 33-1 is not accepted the entries for 'Cable type' need to be corrected.

SuggestedRemedy

[1] Make it clear that these cable entries provide the minimum cabling requirements - since the other two rows in this table provide maximum values.

[2] Is it really correct that we require the use of Cat 3 cabling for Type 1 operation, remember that 10BASE-T operates over DIW as well as Cat-3. In addition we should fully specify Cat-3.

[3] We should fully specify what we mean by Class D since ISO/IEC 11801:1995 Class D is Cat 5 whereas ISO/IEC 11801:2002 is Cat 5e. Further even meeting ISO/IEC 11801:1995 Class D is not enough - we place an additional requirement that the loop resistance has to be 25 Ohms or less. This fact should be footnoted.

Proposed Response Response Status W

PROPOSED ACCEPT.

500, 413

CI 33 SC 33.1.4.1 P 25 L 50 # 519  
 Law, David 3Com

Comment Type TR Comment Status D cable

It is necessary, but not sufficient, to state that Type 2 operation require ISO/IEC 11801:1995 Class D cabling or better. ISO/IEC 11801:1995 Class D specifies a maximum loop resistance of 40 Ohms - see SC25/WG3 response 1 in ISO/IEC JTC 1/SC 25/WG 3 N 807 [ <http://www.ieee802.org/3/at/public/nov06/3n807.pdf> ]. We need to also state that we are placing an additional requirement that the loop resistance has to be less than 25 Ohms.

SuggestedRemedy

Change '.. Class D or better cabling as specified in ISO/IEC 11801:1995.' to read '.. Class D, or better, cabling as specified in ISO/IEC 11801:1995 with the additional requirement that channel DC loop resistance shall be 25 Ohms or less.'

Proposed Response Response Status W

PROPOSED ACCEPT.

Also, 405

CI 33 SC 33.1.4.1 P 26 L 1 # 520  
 Law, David 3Com

Comment Type TR Comment Status D cable

I believe that ISO/IEC 11801:1995 Class D cabling, including a channel DC loop resistance of 25 Ohms, is equivalent to the Cat 5 cabling, not Cat 5e. I'm not sure why we seem to be precluding the use of Cat 5 when it is sufficient to support Type 2 operation.

SuggestedRemedy

Change the text 'NOTE-ANSI/TIA/EIA-568-B.2 provides a specification (Category 5e) for cabling that meets the minimum requirements for Type 2 operation.' to read 'NOTE-ANSI/TIA/EIA-568-A-1995 provides a specification (Category 5) for media that meets the minimum requirements for Type 2 operation.'

Also change Page 25, line 52 from '5e' to '5'.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE 124

CI 30 SC 30 P 15 L 1 # 521  
 Law, David 3Com

Comment Type TR Comment Status X

Need to add the containment for the new LLDP objects.

SuggestedRemedy

Update Figure 30-3 and 30-4 and related text as required.

Proposed Response Response Status O

IEEE P802.3at D3.0 PoEplus comments

CI 33 SC 33.2.9.5 P 50 L 19 # 522  
 Schindler, Fred Cisco Systems

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

Many PSEs are policing power using a sampled data system. Accurate results depend on PC power demand bandwidth permitted. The power bandwidth (BW) is not defined but measured data shows most PDs stay at an approximately constant power value. Because power conservation is becoming more important, PoE plus PDs are more likely to change power values compared to their predecessors. This will lead to increased data corruption and sampled data errors.

*SuggestedRemedy*

Place a power frequency restriction on PDs. This information needs to be tied to any PD surge allowance. Significant PD power ripple should be discouraged because this leads to problem with interoperability.

The PD may draw 15 mA/us at a 350 mA average current, this allowance permits ripple currents that could exceed the "power feeding ripple and noise" limits of the PSE. PSE common mode ripple results due to the impedance in series with the PSE supply.

For example, the OCL required for 100 Mb/s data rates is 350 uH. Half this inductance is in series with one-end the PSE supply. This impedance component alone exceeds the ripple allowance.

The PSE output impedance should be analyzed and then the PD power BW should be specified to ensure system interoperability.

Proposed Response Response Status **W**  
 reviewed

CI 33 SC 33.2.9 P 48 L 45 # 523  
 Schindler, Fred Cisco Systems

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

The value for TLIM depends on the PSE type.

*SuggestedRemedy*

Replace the 50 with a type specific value or reference section 33.2.9.8.

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

Need to craft the new text.

CI 33 SC 33.2.5 P 41 L 39 # 524  
 Schindler, Fred Cisco Systems

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

The sentence "PSE operation is independent of dat link status." is no longer valid.

*SuggestedRemedy*

Strike the sentence.

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

CI 33 SC 33.2.9.9 P 51 L 33 # 525  
 Schindler, Fred Cisco Systems

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

Provide units for the requirements in 33-2, and 33-3, on page 52.

*SuggestedRemedy*

Both formula require units of seconds.

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

CI 33 SC 33.1.4 P 25 L 45 # 526  
 Schindler, Fred Cisco Systems

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

The IEEE normally references international standards.

*SuggestedRemedy*

Replace CAT-3 with class C.

Proposed Response Response Status **W**  
 reviewed

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.2.9.5 P 50 L 25 # 527  
 Schindler, Fred Cisco Systems

Comment Type E Comment Status D

Repeating numerical values that are already variables may lead to errors.

SuggestedRemedy

Scan this document for numerical values that have variables alternatives. Replace the numerical values with the appropriate variable.  
 Replace 50 ms with the variable tovid.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Replace 50 ms with the variable tovid.

Cl 33 SC 33.2.9.12 P 53 L 19 # 528  
 Schindler, Fred Cisco Systems

Comment Type ER Comment Status D

The definition used in the PSE and PD section (page 67, line 37) should be made the same.

SuggestedRemedy

Replace "over 1 second" with "using and sliding window with a width of 1 second."

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 33 SC 33.2.4.1 P 33 L 24 # 529  
 Schindler, Fred Cisco Systems

Comment Type ER Comment Status D

Repeating numerical values that are already variables may lead to errors.

SuggestedRemedy

Scan this document for numerical values that have variables alternatives. Replace the numerical values with the appropriate variable. For 2.8Vdc replace this with Voff.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

For 2.8Vdc replace this with Voff.

Cl 33 SC 33.2.4.7 P 40 L 34 # 530  
 Schindler, Fred Cisco Systems

Comment Type T Comment Status D

Variable do\_classification\_done is not defined.

SuggestedRemedy

Define do\_classification\_done.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Need to craft the text

Cl 33 SC 33.2.9 P 49 L 8 # 531  
 Schindler, Fred Cisco Systems

Comment Type T Comment Status X

Why did this change from Trise?  
 I assume this was changed to accommodate easier measurements.

This was 15 us minimum from 10% to 90%.

$$57 V \times 0.8 = 45.6 V$$

$$45.6/10 = \text{time} = 4.6 \text{ us}$$

The new value speeds up the voltage ramp.

SuggestedRemedy

Decrease the maximum from 10 to

$$57V \times 0.8 / 15\text{us} = 3 \text{ V/us}$$

Proposed Response Response Status W

reviewed

Cl 33 SC 33.4.4 P 74 L 42 # 532  
 Schindler, Fred Cisco Systems

Comment Type T Comment Status D

The second last sentence contradicts prior text within the same section.

SuggestedRemedy

Replace "not exceed 50 mV peak-to-peak" with "be."

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.2.4.6 P41 L3 # 533

Schindler, Fred Cisco Systems

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

A PD is not permitted to consume ICUT for more than 5% of the time over a 1 second sliding window. A PSE does not need to provide more than what a PD may use.

*SuggestedRemedy*

An allowance for removing PI power needs to be provided without forcing a design requirement. All state diagrams shown in figure 33-11 have a concept of duty cycle. To avoid forcing design and in order to keep state diagrams simple, create a generic threshold and dut cycle monitor that can be used at any time to monitor PD allowances.

From reset, at any time the statemachine can be used to test the PD allowance. This generic state diagram would count Tover when the system operates above the threshold. The monitoring period, Tp, starts when the threshold is exceed. If Tover/Tp exceeds the duty cycl before Tp expires, a FAULT condition exists.

To monitor Tovld, Ton counts Tovld counts and Tp = 1 second.

Proposed Response Response Status **W**

reviewed

Cl 33 SC 33.2.9 P49 L26 # 534

Schindler, Fred Cisco Systems

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

The "Transformer and Channel" ad hoc is still working with the task force on an appropriate value for lumb.

*SuggestedRemedy*

Update this value using the accepted recommendation.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

Correlate to Yair's same comment.

Cl 33 SC 33.7.6.5 P96 L20 # 535

Schindler, Fred Cisco Systems

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

The L1 classification systems leaves power on under the same conditions. Power is removed when the MPS does not exist. Therefore, a powered unconnected PI will not exist.

*SuggestedRemedy*

Power removal should be made optional. This can be done by deleting the entry condition that tests loss of communication.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

## IEEE P802.3at D3.0 PoEplus comments

Cl 33 SC 33.4.4 P74 L 40 # 536  
Schindler, Fred Cisco Systems

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

The IEEE specification is not consistent with its common mode noise measurement requirements. Clause 33 specifies a range of 1 MHz to 100 MHz for a PSE. Other clauses (ex/ 14.3.1.2.5 10BASE-T) have no concept of measurement BW.

Testing during clause 33 development ensured data integrity with the constraints imposed. Reducing the BW of existing clause common mode measurements will not reduce the compliance of legacy systems. Requiring a PSE to meet common mode noise requirements below 1 MHz places an unnecessary cost burden on the system.

*SuggestedRemedy*

Modify other clauses or place a statement in clause 33 that allows the Ethernet MDI to use the clause 33 common mode requirements whether PoE power is present or not for all PoE supported data rates.

Suggested text for clause 33.4.4 add to the bottom of the existing text:

[The magnitude of the common-mode AC output voltage measured according to Figure 33–2' and Figure 33–22 at the transmit PI while transmitting data and with power applied, Ecm\_out, shall not exceed 50 mV peak when operating at 10 Mb/s, and 50 mV peak-to-peak when operating at 100 Mb/s or greater. The magnitude of the common-mode AC voltage shall not exceed 50 mV peak-to-peak measured at all other PIs. The frequency of the measurement shall be from 1 MHz to 100 MHz.]

The common-mode output voltage requirements of this clause may be applied for the MAU defined in Clause 14 and the PHYs defined in Clause 25 and Clause 40, while transmitting data whether power is applied or not.

Proposed Response Response Status **W**  
reviewed