Cl **33B** *SC* **33B** *P* **151** *L* **10** # 1

Maguire, Valerie — The Siemon Company

Comment Type **E** *Comment Status* **X**

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**

EDITOR NOTE: comment type empty at import, set to E as a default.

Cl **33** *SC* **33.1.1** *P* **23** *L* **50** # 2

Maguire, Valerie — The Siemon Company

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.1.4.1** *P* **25** *L* **50** # 3

Maguire, Valerie — The Siemon Company

Comment Type **E** *Comment Status* **X**

Reference to minimum category of TIA cabling required to support Type 2 operation is missing.

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* **O**

Cl **33** *SC* **33.4.8** *P* **90** *L* **3** # 4

Maguire, Valerie — The Siemon Company

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.4.8** *P* **90** *L* **37** # 5

Maguire, Valerie — The Siemon Company

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.4.8** *P* **91** *L* **44** # 6

Maguire, Valerie — The Siemon Company

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.4.8** *P* **91** *L* **47** # 7
Maguire, Valerie — The Siemon Company

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.4.8.1** *P* **92** *L* **12** # 8
Maguire, Valerie — The Siemon Company

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.4.8.1.4** *P* **93** *L* **23** # 9
Maguire, Valerie — The Siemon Company

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.5.5** *P* **82** *L* **29** # 10
Maguire, Valerie — The Siemon Company

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.9.3.5** *P* **110** *L* **49** # 11
Maguire, Valerie — The Siemon Company

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.9.3.5** *P* **111** *L* **29** # 12
Maguire, Valerie — The Siemon Company

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.9.3.8** *P* **112** *L* **27** # 13

Maguire, Valerie — The Siemon Company

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33B** *SC* **33B** *P* **120** *L* **8** # 14

Maguire, Valerie — The Siemon Company

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33B** *SC* **33B** *P* **120** *L* **16** # 15

Maguire, Valerie — The Siemon Company

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33B** *SC* **33B** *P* **120** *L* **27** # 16

Maguire, Valerie — The Siemon Company

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.1.4.2** *P* **26** *L* **9** # 17

Maguire, Valerie — The Siemon Company

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

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 to 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 practices, 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 for this standard to address these alternate supply voltage and reduced cable length implementations."

Proposed Response *Response Status* **O**

Cl **33** SC **33.1.4.2** P **26** L **6** # 18

Maguire, Valerie — The Siemon Company

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

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* **O**

Cl **33** SC **33.2** P **27** L **11** # 19

Marris, Arthur — Cadence

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33B** SC **33B** P **120** L **9** # 20

Marris, Arthur — Cadence

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

Out of date information

SuggestedRemedy

Change
"Although initial implementations are expected to make use of Clause 33 to provide powered IP 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* **O**

Cl **33** SC **33.2.8.1** P **45** L **46** # 23

Delveaux, Bill — Cisco

Comment Type **E** *Comment Status* **X**

Substitue variable name for number

SuggestedRemedy

Change 51mA to Iclass_lim Min

Proposed Response *Response Status* **O**

Cl **33** SC **33.3.5.1** P **63** L **45** # 24

Feldman, Daniel — Microsemi

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

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* **O**

Cl **33** *SC* **33.3.7** *P* **66** *L* **15** # 25

Feldman, Daniel — Microsemi

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

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* **O**

Cl **33** *SC* **33.2.4.1** *P* **33** *L* **25** # 26

Patoka, Martin — Texas Instruments

Comment Type **E** *Comment Status* **X**

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**

Comment Type blank, set to E as default.

Cl **33** *SC* **33.2.4.3** *P* **33** *L* **51** # 27

Patoka, Martin — Texas Instruments

Comment Type **E** *Comment Status* **X**

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**

Comment Type blank, set to E as default.

Cl **33** *SC* **33.1.4** *P* **25** *L* **44** # 28

Patoka, Martin — Texas Instruments

Comment Type **E** *Comment Status* **X**

Table 33-1 mixes TIA/EIA and ANSI terms for the cable type.

SuggestedRemedy

Suggest changine the CAT3 reference to Class C.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.3** *P* **25** *L* **8** # 29

Patoka, Martin — Texas Instruments

Comment Type **E** *Comment Status* **X**

Figure 33-3. The drawing for the medium infers that it begins before the PHY.

SuggestedRemedy

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

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.1** *P* **33** *L* **13** # 30

Patoka, Martin — Texas Instruments

Comment Type **E** *Comment Status* **X**

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* **O**

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

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** SC **33.2.4.4** P **34** L **13** # 32
Patoka, Martin Texas Instruments

Comment Type **E** *Comment Status* **X**

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 conditions are different from those monitored by the state
diagrams in Figure 33–11.

Proposed Response *Response Status* **O**

Cl **33** SC **33.2** P **27** L **5** # 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* **O**

Cl **33** SC **33.2.4.7** P **39** L **38** # 34
Patoka, Martin Texas Instruments

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

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

SuggestedRemedy

Provide definition.

Proposed Response *Response Status* **O**

Cl **33** SC **33.2.9** P **48** L **51** # 35
Patoka, Martin Texas Instruments

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

Additional Information reference for Ptype references temperature derating table.

This also applies to Iport_max, item 5, line 32.

SuggestedRemedy

Reference Table 33-1 for Icable.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5** *P* **63** *L* **11** # 36

Patoka, Martin Texas Instruments

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

To maintian 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* **O**

Cl **33** *SC* **33.3.7.2** *P* **67** *L* **32** # 37

Patoka, Martin Texas Instruments

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

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 draw as specified by Table 33–14.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.1** *P* **43** *L* **29** # 38

Patoka, Martin Texas Instruments

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

Table 33-4. 1) Neither of the signature offsets (Vos, Ios) 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 Ios min from table 33-4 to be compatible with Table 33-12.

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

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.9.6** *P* **50** *L* **49** # 39

Patoka, Martin Texas Instruments

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

The requirements for inrush between 0V to 10V appear to require a current of Iinrush (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* **O**

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**

Cl **33** *SC* **33.2.9** *P* **49** *L* **7** # 41

Patoka, Martin Texas Instruments

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

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* **O**

Cl **33** *SC* **33.2.1** *P* **27** *L* **24** # 42

Patoka, Martin Texas Instruments

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

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* **O**

Cl **33** *SC* **33.3.5.1** *P* **63** *L* **45** # 43

Patoka, Martin Texas Instruments

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

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* **O**

Cl **33** *SC* **33.3.7** *P* **66** *L* **16** # 44

Patoka, Martin — Texas Instruments

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

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* **O**

Cl **33** *SC* **33.3.7.3** *P* **68** *L* **7** # 45

Patoka, Martin — Texas Instruments

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

The inrush requirement forsec 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 aviod 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 required to have more sophisticated control due to 2-event classification, and virtually all integrated PD 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* **O**

Cl **33** *SC* **33.3.7.6** *P* **69** *L* **48** # 46

Patoka, Martin — Texas Instruments

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

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 (CPort 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 IPort 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 RCh and the PSE voltage is changed from VPort min to VPort max as defined in Table 33–9, Pport may be exceeded for no more than 50 ms. Input capacitance of
180 uF or less requires no special input considerations."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.2** *P* **44** *L* **11** # 47

Anslow, Peter — Nortel Networks

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

The behaviour of the PSE for parallel signature capacitance between Cgood max and Cbad min is not defined

SuggestedRemedy

Add "A PSE may accept or reject a parallel signature capacitance in the band between Cgood max and Cbad min."

Proposed Response *Response Status* **O**

Cl **01** *SC* **01.1.4** *P* **13** *L* **18** # 48

Anslow, Peter — Nortel Networks

Comment Type **E** *Comment Status* **X**

"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* **O**

Cl **01** *SC* **01.1.4** *P* **13** *L* **21** # 49

Anslow, Peter — Nortel Networks

Comment Type **E** *Comment Status* **X**

"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* **O**

Cl **01** *SC* **01.1.4** *P* **13** *L* **28** # 50

Anslow, Peter — Nortel Networks

Comment Type **E** *Comment Status* **X**

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 confusing

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 802.3™-2005 power levels.
1.4.x PSE or PD type 2: A PSE or PD that is designed for greater than IEEE Std 802.3™-2005 power levels.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.1** *P* **23** *L* **52** # 51

Anslow, Peter — Nortel Networks

Comment Type **E** *Comment Status* **X**

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 clause."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4.2** *P* **26** *L* **10** # 52

Anslow, Peter — Nortel Networks

Comment Type **E** *Comment Status* **X**

PoE is not in the list of abbreviations

SuggestedRemedy

Add PoE to the list of abbreviations

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.9.9** *P* **51** *L* **33** # 53

Anslow, Peter — Nortel Networks

Comment Type **E** *Comment Status* **X**

In equations 33-2 and 33-3 there are no units for the times t.

SuggestedRemedy

change 10x10-6 to 10 us, 8.2x10-3 to 8.2 ms and 10x10-3 to 10 ms

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7.4** *P* **68** *L* **16** # 54

Anslow, Peter — Nortel Networks

Comment Type **E** *Comment Status* **X**

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 cause PPort max to be exceeded for more than 50 ms maximum and 5% duty cycle maximum.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.4.8.2** *P* **81** *L* **18** # 55

Anslow, Peter — Nortel Networks

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** SC **33.3.7** P**66** L**22** # 56
Darshan, Yair Microsemi Corporation

Comment Type **E** *Comment Status* **X**

Type 2 PD input voltage during overload need to be updated according to Iport=600mA*0.4/0.35
New value is 50V-Rch*0.5*Icable*0.4/0.35=41.4V

SuggestedRemedy

Replace 39.7 with:
Option 1: 41.4
Option 2: 50V-Rch*Icable*0.2/0.35

Proposed Response *Response Status* **W**

Comment Type blank, set to E as default.

Cl **33** SC **33.2.9.9** P**51** L**42** # 57
Darshan, Yair Microsemi Corporation

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** SC **33.3.5.2** P**64** L**14** # 58
Darshan, Yair Microsemi Corporation

Comment Type **E** *Comment Status* **X**

Draft D3.0:

Typo. Should be PD and not IPD

SuggestedRemedy

Delete I

Proposed Response *Response Status* **O**

Cl **33** SC **33.2.8** P**44** L**25** # 59
Darshan, Yair Microsemi Corporation

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

Draft D3.0

Interoggation is not defined in the standard however detecion does.

SuggestedRemedy

Replace Interoggation with detection

Proposed Response *Response Status* **O**

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

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

SuggestedRemedy

Proposed Response *Response Status* **O**

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

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

Draft D3.0:

we change peak current to peak power

SuggestedRemedy

Change peak current to peak power

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7.9** *P* **70** *L* **21** # 62

Darshan, Yair — Microsemi Corporation

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

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* **O**

Cl **33** *SC* **33.3.8.1** *P* **70** *L* **48** # 63

Darshan, Yair — Microsemi Corporation

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

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* **O**

Cl **33** *SC* **33.4.8.2** *P* **81** *L* **23** # 64

Darshan, Yair — Microsemi Corporation

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

Draft D3.0
There is some confusion in the text regarding DC bias current and Iunb in page 81 line 29.
The dc bias current is the net result of DC bias current caused by the data, Ibias1 and the DC bias current caused by Iunb, Ibias2=Iunb/2 so DC bias current=Ibias1+Ibias2.
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 Iunb mA (see Table 33–9)."
To:
"Additionally, the requirements will be met with a DC bias current between 0 mA and (8+0.5*Iunb)mA (see Table 33–9 for Iunb)."

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* **O**

Cl **33** *SC* **33.3.7** *P* **66** *L* **15** # 65

Darshan, Yair — Microsemi Corporation

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

Type 2 PD input voltage need to be updated according to Icable=600mA
New value is 50V-12.5OHM*0.6A=42.5V
or 50V-Icable*Rch*0.5

SuggestedRemedy

Replace 41 with:
Option 1: 42.5
Option 2: 50V-Icable*Rch*0.5

Proposed Response *Response Status* **O**

Cl **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* **O**

Cl **33** *SC* **33.2.4.4** *P* **34** *L* **46** # 67

Darshan, Yair — Microsemi Corporation

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

We need to synchronize between the text in "option_detect_ted" variable and the additional information for item 25 table 33-9, error dedal tyming.
Rational:
The purpose of Ted is to preven from consecutive startup to happen in a duty cycle that can cause heating issues.
Therfore we specified minimum time between startups of 750msec.
It is also the minimum time between consecutive detection attemps 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) can be performed by the PSE during the ted_timer interval."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.9.9** *P* **52** *L* **52** # 68

Darshan, Yair — Microsemi Corporation

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

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* **O**

Cl **33** *SC* **33.1.4** *P* **25** *L* **41** # 69

Darshan, Yair — Microsemi Corporation

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

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

SuggestedRemedy

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

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **34** *L* **4** # 70

Darshan, Yair
Microsemi Corporation

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

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 operating 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* **O**

Cl **33** *SC* **33.3.5** *P* **63** *L* **6** # 71

Darshan, Yair
Microsemi Corporation

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

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 equiped with L2 the PD will fully work and when connected to a PSE that doesnt equipped with L2 it may or will not work.
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 physical 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* **O**

Cl **33** *SC* **33.2.3** *P* **32** *L* **50** # 72

Darshan, Yair — Microsemi Corporation

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

Draft 3.0
The standard should not preclude implementations that are using both alternative A and B due to the following reasons:
a) It is out of scope of the standard to limit implementations that meets standard requirements.
b) There are no interoperability issues if PD gets power from 2x 2 pairs power source especially 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 the 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 due to the fact that there are other alternatives allowed by the standard and the vendor has choices...
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 shown in previous meeting presentations.
h) For outdoor applications, temperature rise issues of the cables when using 60degC cabling system grade can be solved if the same power is delivered over 2 x 2P which is an easy solution for 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 which consists of 4 pairs to support two PDs that each one of them is connected to a 2P system. The current text precludes using this feature.

SuggestedRemedy

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

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

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.9.6** *P* **50** *L* **50** # 73

Darshan, Yair — Microsemi Corporation

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

Draft 3.0, Figure 33C.4

In many ocasions 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 inacuracies 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* **O**

Cl **33** *SC* **33.3.1** *P* **57** *L* **41** # 74

Darshan, Yair — Microsemi Corporation

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

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 relaible 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 specifically not allowed by this standard."

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

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4** *P* **33** *L* **3** # 75

Darshan, Yair — Microsemi Corporation

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

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* **O**

Cl **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 PSE.
We already specified Tinrush, Iinrush for startup and ILIM/TLIM for short circuit.
I believe that this differentiation will help to make clearer standards.

SuggestedRemedy

Steps:
1. Replace figure 33-11 with the attached modification.
Changes are: Startup and short circuit behavior has separate drawing and the same behavior of the old drawing.
1.1 Add to 33.2.4.5:
"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* **O**

Cl **33** *SC* **33.2.8.2** *P* **46** *L* **48** # 77

Darshan, Yair — Microsemi Corporation

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

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* **O**

Cl **33** *SC* **33.3.1** *P* **57** *L* **41** # 78

Darshan, Yair — Microsemi Corporation

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

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

This is implementation that is inline with the global effort for reducing power loss and in my opinion we are not authrized 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 allowed by this standard."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **39** *L* **38** # 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 adverised 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 interoperbility 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 may 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 fix 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* **O**

Cl **33** *SC* **33.2.9.6** *P* **50** *L* **46** # 80

Darshan, Yair — Microsemi Corporation

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

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* **O**

Cl **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 template and the PSE upper bound template

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.9.12** *P* **53** *L* **22** # 82

Darshan, Yair — Microsemi Corporation

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

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 it 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* **O**

Cl **33** *SC* **33.2.9.13** *P* **53** *L* **31** # 83

Darshan, Yair — Microsemi Corporation

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

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 Icable as specified in Table 33-9."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.5** *P* **60** *L* **15** # 84

Darshan, Yair — Microsemi Corporation

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

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 and 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* **O**

Cl **33** *SC* **33.3.7** *P* **66** *L* **28** # 85

Darshan, Yair — Microsemi Corporation

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

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* **O**

Cl **33** *SC* **33.3.7** *P* **66** *L* **37** # 86

Darshan, Yair — Microsemi Corporation

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

Draft D3.0:

Our objective for determine Ppeak was that Ppeak=Pport_max*0.4/0.35.
The current text specifies Ppeak = (0.4/0.35)*(Pport_max/Vport_static_min)*Vport_min.
Analyzing the above equation shows the following:
A) Pport_max is a constant number determined by item 4 which is 25.5W=0.6A*42.5V which is OK.
B) Vport_static_min is not defined, hence it is not clear what it is?
C) Vport_min=42.5V (for Icable =600mA)

I don't see the benefit of using such equation that actually don't supply additional information.
It is simpler to define Ppeak=(0.4/0.35)*Pport_max

SuggestedRemedy

Replace:
"(0.4/0.35)*(Pport_max/Vport_static_min)*Vport_min."

With "Ppeak=(0.4/0.35)*Pport_max"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7.5** *P* **69** *L* **41** # 87

Darshan, Yair — Microsemi Corporation

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

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* **O**

Cl **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* **O**

Cl **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**

Cl **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 reclassify itself to lower class power then advertized by the hardware classification but not to higher class power.

Proposed Response *Response Status* **O**

Cl **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* **O**

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

Darshan, Yair — Microsemi Corporation

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

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* **O**

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

Darshan, Yair — Microsemi Corporation

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

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 Vport_min<=Vport<=Vport_max" for each part of the equations.

Proposed Response *Response Status* **O**

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

Darshan, Yair — Microsemi Corporation

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

det_pd_type function returns multiple variables i_lim_type and i_lim_tymer.
The values for both variables may be Type 1 or Type 2.
We agree to allow Type 2 PSE to use Type 2 Ilim/Tlim 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_tymer regardles of the actual class readings"

Proposed Response *Response Status* **O**

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

Darshan, Yair — Microsemi Corporation

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

"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 advertized class"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.9** *P* **48** *L* **50** # 96

Darshan, Yair — Microsemi Corporation

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

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* **O**

Cl **33** *SC* **33.2.9.6** *P* **50** *L* **50** # 97

Darshan, Yair — Microsemi Corporation

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

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 as 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* **O**

Cl **33** *SC* **33.2.9.9** *P* **51** *L* **28** # 98

Darshan, Yair — Microsemi Corporation

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

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* **O**

Cl **33** *SC* **33.3.7.5** *P* **69** *L* **36** # 99

Darshan, Yair — Microsemi Corporation

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

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* **O**

Cl **33** *SC* **33.3.8.1** *P* **70** *L* **48** # 100

Darshan, Yair — Microsemi Corporation

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

The title "Input Current" is no longer relevant.

SuggestedRemedy

Change title to "PD Maintaing power Signature"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.5.8** *P* **83** *L* **9** # 101

Cobb, Terry — Commscope

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

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

SuggestedRemedy

Delete "Specfic requirements and" then start the sentence.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4.2** *P* **26** *L* **6** # 102

Cobb, Terry — Commscope

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

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* **O**

Cl **33** *SC* **33.3.3.3** *P* **58** *L* **45** # 103

Vladan, Ionel Marius — ON Semiconductor

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.3.5.1** *P* **63** *L* **45** # 104

Vladan, Ionel Marius — ON Semiconductor

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** SC **33.2.8.2** P**46** L**17** # 105

Vladan, Ionel Marius ON Semiconductor

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

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 Tclass = 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 "All measurements of Iclass shall be taken after 5 ms to ignore initial transients."

Proposed Response *Response Status* **O**

Cl **01** SC **01.3** P**13** L**11** # 106

LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **01** SC **01.4** P**13** L # 107

LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **X**

The term "Midspan" should be capitalized.

SuggestedRemedy

Capitalize occurences of "Midspan."

Proposed Response *Response Status* **W**

Comment Type blank, set to E as default.

Cl **01** SC **01.4** P**13** L**27** # 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* **O**

Cl **30** SC **30.2.5** P**15** L**39** # 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** P**15** L**20** # 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** *P* **19** *L* **12** # 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** *P* **24** *L* **13** # 112

LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.1.3** *P* **24** *L* **50** # 113

LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.1.4.2** *P* **26** *L* **9** # 114

LANDRY, MATTHEW SILICON LABS

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

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* **O**

Cl **33** *SC* **33.2.4.1** *P* **33** *L* **24** # 115

LANDRY, MATTHEW SILICON LABS

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

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* **O**

Cl **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* **O**

Cl **33** *SC* **33.2.4.7** *P* **41** *L* **15** # 117

LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **X**

"LIM" and "Inrush" should be subscripts of "I," per the constants defined in 33.2.4.3.

SuggestedRemedy

Fix formatting.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6** *P* **42** *L* **43** # 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* **O**

Cl **33** *SC* **33.3.7** *P* **66** *L* **23** # 119

Beia, Christian STMicroelectronics

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

Table 33-17
The tables should contain only numbers and not the formulae required to calulate them.
The content of each cell will be the result of the respective formula, and will be automatically updated if somthing 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* **O**

Cl **33** SC **33.3.7** P **66** L **37** # 120

Beia, Christian STMicroelectronics

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

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)x(Pport_max/Vport_min)xVtran_min

Proposed Response *Response Status* **O**

Cl **33** SC **33.3.7** P **66** L **37** # 121

Beia, Christian STMicroelectronics

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

Table 33-17
It is very difficult for a reader to find out the right number for Ppeak. As suggested for Pport the tables should contain only numbers and not the formulae required to calulate 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* **O**

Cl **33** SC **33.2** P **27** L **3** # 122

Frazier, Howard Broadcom

Comment Type **E** *Comment Status* **X**

"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* **O**

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* **X**

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* **O**

Cl **33** SC **33.2** P **27** L **10** # 125

Frazier, Howard Broadcom

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

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* **O**

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

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

This sentence:

Implementors are free to implement either alternative or both.

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

SuggestedRemedy

Delete the sentence.

Proposed Response *Response Status* **O**

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

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

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* **O**

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

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

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* **O**

Cl **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 2 × 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**

Cl **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 preceeding 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**

Cl **33** *SC* **33.3.2.9** *P* **48** *L* **46** # 131

Johnson, Peter — Sifos Technologies

Comment Type **E** *Comment Status* **X**

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 (PD 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**

Comment Type empty, set to E as default

Cl **33** *SC* **33.2.9.9** *P* **52** *L* **52** # 132

Johnson, Peter — Sifos Technologies

Comment Type **E** *Comment Status* **X**

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**

Comment Type empty, set to E as default

Cl **33** *SC* **33.2.9** *P* **48** *L* **5** # 133

Johnson, Peter — Sifos Technologies

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.7.2.2** *P* **91** *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 at 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** *P* **46** *L* **38** # 135

Johnson, Peter — Sifos Technologies

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

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 property 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* **O**

Cl **33** *SC* **33.2.4.7** *P* **41** *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* **O**

Cl **33** *SC* **33.2.4.7** *P* **39** *L* **51** # 137

Johnson, Peter — Sifos Technologies

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

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)) * Iport < Icut. This is prefered 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 in Figure 33-9.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4.1** *P* **25** *L* **50** # 138

Alan Flatman — LAN Technologies

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

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* **O**

Cl **33** *SC* **33.1.4.1** *P* **26** *L* **1** # 140

Alan Flatman — LAN Technologies

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

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* **O**

Cl **00** *SC* **00** *P* *L* # 141

Thomas Dineen Dineen Consulting

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

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.

"Objective 10 PoE Plus will vigorously pursue supporting the operation of midspan PSEs for 1000BASE-T."

Objective 9 is an inappropriate and non specific objective and should therefor be deleted or replaced. We do not specify "vigorously pursue" in an objective. How is the reader of the draft to determine if the if the appropriate degree of vigor has been achieved and thus the objective met? You either specify operation with 1000BASE-T or you do not. No research. Please delete or replace with something more specific.

"Objective 11 Research the operations of midspan and endpoint PSEs for 10GBASE-T including providing cable heating data for evaluation by IEEE P802.3an."

Objective 11 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 specify operation with 10GBASE-T or you do not. No research. Please delete or replace with something more specific.

"Objective 12 That IEEE 802.3af power over the MDI isolation requirements be revisited as part of the PoE Plus work"

Objective 12 is an inappropriate and non specific objective and should therefor be deleted or replaced. We do not specify "revisited" in an objective. How is the reader of the draft to determine if the revisiting has been completed properly and thus the objective met? You either specify MDI isolation requirements or you do not. No revisits. Please delete or replace with something more specific.

SuggestedRemedy

Delete or modify comments as discussed above.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2** *P* **27** *L* **3** # 142

John Abbott Corning Incorporated

Comment Type **E** *Comment Status* **X**

the acronym PSE can stand for many things and only Stands for "power sourcing equipment" in this standard. The sentence should be reworded.

SuggestedRemedy

Substitute "The power sourcing equipment (PSE) provides the power...."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.4.8.1.1** *P* **80** *L* **26** # 143

John Abbott Corning Incorporated

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

The equation on line 26 for {NEXTconn}dB should (a) indicate log10 as on page 74 (section 33.4.3, Impedance Balance} and (b) technically one cannot take the log10 of an argument with UNITs; f = frequency [MHz]/1 [MHz]

SuggestedRemedy

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

Proposed Response *Response Status* **O**

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 with UNITs; f = frequency [MHz]/1 [MHz]

SuggestedRemedy

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

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.3** *P* **32** *L* **51** # 145

Prof. Dr. Christian Kargel Bundeswehr University

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

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* **O**

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 shold be added.
Each time PD or PSE initiate Data Link Layer PDU to advertize its state, or send change request PDU it should increment secquence number by one. ACK/NACK reply PDU should contain same secuence number (0-3)

In addition bit 0-1 of Acknowlage 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 advertize its state, or send change request PDU it should increment secquence number by one. ACK/NACK reply PDU should contain same secuence number (0-3)"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.7** *P* **97** *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 swich to backup power.
The reason is that the PD is not in aposition 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 bellow 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** *P* **84** *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 this management option is applicable whenever PSE is instantiated in the same physical package as a PHY.

To make this subclause more clearer, the drawing bellow 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** *P* **84** *L* **3** # 149

Koper, Ezra Microsemi

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

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

SuggestedRemedy

PD should be ommited from lines 3 and 6.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.2.1.3** *P* **90** *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 possition 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 (fron central power management point of view) and the PD is the slave and it is also good for backwards competability.

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 folowing 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 then enforcing its own priority, it should set this field to 00"

Proposed Response *Response Status* **O**

Cl **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 × (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**

Cl **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 purpose of this TLV would be for the PD to communicate to the PSE a fallback PD power value to which 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 PD 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 PSE 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 that the fallback PD power value takes the place of the requested PD power value.

Proposed Response *Response Status* **O**

Cl **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**

Cl **33** *SC* **33.3.5.2** *P* **64** *L* **14** # 154

Jetzt, John Avaya

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **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**

Cl **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**

Cl **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**

Cl **33** SC **33.7.2.2** P **90** L **47** # 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**

Cl **33** SC **33.7.2.2** P **91** L **6** # 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**

Cl **33** SC **33.7.2.2** P **91** L **9** # 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**

Cl **33** *SC* **33.7.2.4** *P* **91** *L* **25** # 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**

Cl **33** *SC* **33.7.2.5** *P* **91** *L* **47** # 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**

Cl **33** *SC* **33.7.3** *P* **91** *L* **51** # 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**

Cl **33** *SC* **33.7.3** *P* **92** *L* **6** # 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**

Cl **33** *SC* **33.7.5** *P* **92** *L* **53** # 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**

Cl **33** *SC* **33.7.6.2** *P* **93** *L* **43** # 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**

Cl **33** *SC* **33.7.6.2** *P* **94** *L* **9** # 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**

Cl **33** *SC* **33.7.6.2** *P* **94** *L* **4** # 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**

Cl **33** *SC* **33.7.6.2** *P* **94** *L* **39** # 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**

Cl **33** *SC* **33.7.6.2** *P* **95** *L* **19** # 170
Jetzt, John Avaya

Comment Type **E** *Comment Status* **X**
Fix typo.

SuggestedRemedy
"A summary of cross-references between . . . "

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.6.3** *P* **95** *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**

Cl **33** *SC* **33.7.6.5** *P* **96** *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**

Cl **33** *SC* **33.7.6.5** *P* **97** *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**

Cl **33** *SC* **33.2.8** *P* **44** *L* **25** # 174

Reshef, Tamir — Microsemi Corp

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

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* **O**

Cl **30** *SC* **30.12.1.1.11** *P* **19** *L* **12** # 175

Dove, Daniel — ProCurve Networking

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**

Cl **33** *SC* **33.1** *P* **23** *L* **32** # 176

Dove, Daniel — ProCurve Networking

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.1.3** *P* **25** *L* **19** # 177

Dove, Daniel — ProCurve Networking

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* **O**

Cl **33** *SC* **33.2.4.7** *P* **41** *L* **16** # 178

Dove, Daniel — ProCurve Networking

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

The term "Iport > ILIM * power_applied" makes no sense. If Iport > 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* **O**

Cl **33** *SC* **33.2.8.1** *P* **45** *L* **44** # 179
Dove, Daniel ProCurve Networking

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

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* **O**

Cl **33** *SC* **33.2.11.1.2** *P* **56** *L* **16** # 180
Dove, Daniel ProCurve Networking

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

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* **O**

Cl **33** *SC* **33.7.1** *P* **89** *L* **17** # 181
Dove, Daniel ProCurve Networking

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**

Cl **33** *SC* **33.7.2** *P* **89** *L* **26** # 182
Dove, Daniel ProCurve Networking

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 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 for that state.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.2.2** *P* **91** *L* **10** # 183
Dove, Daniel ProCurve Networking

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**

Cl **33** *SC* **33.7.3** *P* **92** *L* **6** # 184
Dove, Daniel ProCurve Networking

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**

Cl **33** *SC* **33.7.6.2** *P* **93** *L* **37** # 185
Dove, Daniel ProCurve Networking

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**

Cl **33** *SC* **33.7.6.1** *P* **93** *L* **51** # 186
Dove, Daniel ProCurve Networking

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**

Cl **33** *SC* **33.7.6.2** *P* **94** *L* **24** # 187
Dove, Daniel ProCurve Networking

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

Wrong Figure cited

SuggestedRemedy

Figure 33-28 - Update Reference

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.6.2** *P* **94** *L* **28** # 188
Dove, Daniel ProCurve Networking

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

Incorrect figure cited

SuggestedRemedy

Figure 33-27 - Update Reference

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.6.3** *P* **95** *L* **44** # 189
Dove, Daniel ProCurve Networking

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

pd_denial_timer is set to the same value as pse_denial_timer, I believe they should be different

SuggestedRemedy

Change one or both so they are not the same value, and preferrably non-integral of each other.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.6.5** *P* **96** *L* **9** # 190

Dove, Daniel — ProCurve Networking

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**

Cl **33** *SC* **33.7.6.5** *P* **97** *L* **28** # 191

Dove, Daniel — ProCurve Networking

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

Many comments on this figure, too many to enter.

SuggestedRemedy

See attached figure.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.9.13** *P* **53** *L* **25** # 192

LANDRY, MATTHEW — SILICON LABS

Comment Type **E** *Comment Status* **X**

"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 an equation: 3% x ICable.

SuggestedRemedy

Strike the sentence.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.7.3** *P* **43** *L* **19** # 193

LANDRY, MATTHEW — SILICON LABS

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

Reference to Table 33-2 is incorreect.

SuggestedRemedy

Replace "Table 33-2 item 9" with "Table 33-4."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.6.1** *P* **42** *L* **46** # 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, 8, 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* **O**

Cl **33** SC **33.2.8** P **44** L **47** # 195

LANDRY, MATTHEW SILICON LABS

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

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* **O**

Cl **33** SC **33.2.8.1** P **45** L **44** # 196

LANDRY, MATTHEW SILICON LABS

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

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* **O**

Cl **33** SC **33.2.9.2** P **49** L **51** # 197

LANDRY, MATTHEW SILICON LABS

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

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* **O**

Cl **33** SC **33.2.9.9** P **51** L **43** # 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*t != 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 constant 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* **O**

Cl **33** *SC* **33.2.11.1** *P* **54** *L* **14** # 199

LANDRY, MATTHEW SILICON LABS

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

"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 update 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* **O**

Cl **33** *SC* **33.3.5.2** *P* **64** *L* **34** # 200

Tziony, Noam Microsemi

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

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 Detection voltage maximum.

SuggestedRemedy

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

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5.2** *P* **64** *L* **38** # 201

Tziony, Noam Microsemi

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

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 the Detection voltage maximum.

SuggestedRemedy

Mark event threshold (VMark_th) 10.1V min

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5.2** *P* **64** *L* **41** # 202

Tziony, Noam Microsemi

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

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* **O**

Cl **33** *SC* **33.2.8** *P* **45** *L* **14** # 203

Tziony, Noam Microsemi

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

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* **O**

Cl **33** *SC* **33.2.8** *P* **45** *L* **16** # 204

Tziony, Noam Microsemi

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

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* **O**

Cl **33** *SC* **33.2.8** *P* **45** *L* **23** # 205

Tziony, Noam Microsemi

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

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* **O**

Cl **33** *SC* **33.2.8** *P* **45** *L* **25** # 206

Tziony, Noam Microsemi

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

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* **O**

Cl **33** *SC* **33.3.5.2** *P* **64** *L* **36** # 207

Tziony, Noam Microsemi

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

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* **O**

Cl **33** *SC* **33.3.5.2.1** *P* **64** *L* **47** # 208

Tziony, Noam Microsemi

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

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 range 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 voltage range, the PD shall consume Imark"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5.2.2** *P* **65** *L* **3** # 209

Tziony, Noam Microsemi

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

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* **O**

Cl **33** *SC* **33.3.5.2** *P* **64** *L* **36** # 210

Tziony, Noam Microsemi

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

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* **O**

Cl **33** *SC* **33.2.9** *P* **48** *L* **31** # 211

Stanford, Clay — Linear Technology

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.2.9** *P* **48** *L* **31** # 212

Stanford, Clay — Linear Technology

Comment Type **E** *Comment Status* **X**

Table 33-9, Item 5 Addtional 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 paramters. (33.1.4 is were Icable is specified.)

SuggestedRemedy

Table 33-9, Item 5 Addtional 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* **O**

Cl **33** *SC* **33.2.9** *P* **48** *L* **50** # 213

Stanford, Clay — Linear Technology

Comment Type **E** *Comment Status* **X**

Table 33-9, Item 13 Addtional 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 paramters. (33.1.4 is were Icable is specified.)

SuggestedRemedy

Table 33-9, Item 13 Addtional Information

IS:
See 33.1.4.2

SHOULD BE:
See 33.1.4

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.9.5** *P* **50** *L* **17** # 214

Stanford, Clay — Linear Technology

Comment Type **E** *Comment Status* **X**

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" referene 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 refereces 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* **O**

Cl **33A** *SC* **33A** *P* **117** *L* **1** # 215

Stanford, Clay Linear Technology

Comment Type **E** *Comment Status* **X**

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 valuesable information in the Annex, it should be brought into the normatiove seciton. GET RID OF IT!

SuggestedRemedy

Get rid of Annex.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.3** *P* **58** *L* **45** # 216

Stanford, Clay Linear Technology

Comment Type **E** *Comment Status* **X**

Errounous 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* **O**

Cl **33** *SC* **33.3.7.4** *P* **68** *L* **16** # 217

Stanford, Clay Linear Technology

Comment Type **E** *Comment Status* **X**

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 operating 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 exceed PPort max for more than 50 ms maximum and 5% duty cycle maximum. Average operating power shall not exceed PPort.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8.2** *P* **46** *L* **3** # 218

Stanford, Clay Linear Technology

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

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. The 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* **O**

Cl **33** *SC* **33.2.8.2** *P* **46** *L* **10** # 219

Stanford, Clay Linear Technology

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

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* **O**

Cl **33** *SC* **33.2.8.2** *P* **46** *L* **31** # 220

Stanford, Clay Linear Technology

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

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 mantain the PI voltage at VReset for a period TReset before starting a new detection.]

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.9.6** *P* **50** *L* **51** # 221

Stanford, Clay Linear Technology

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

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* **O**

Cl **33** *SC* **33.2.9.7** *P* **51** *L* **6** # 222

Stanford, Clay Linear Technology

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

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* **O**

Cl **33** *SC* **33.2.8.2** *P* **46** *L* **6** # 223

Stanford, Clay Linear Technology

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

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 whe the PI voltage exceeds VClass_min.

The PI VMark requiremnet 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 accomplsihed with a 2mA load for 3ms, after which Vmark can be observed with minimum and maximum load current.]

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8.2** *P* **46** *L* **13** # 224

Stanford, Clay Linear Technology

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

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 whe the PI voltage exceeds VClass_min.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.9.6** *P* **50** *L* **49** # 225

Stanford, Clay Linear Technology

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

Spec states:

During startup, for PI voltages between 0 V and 10 V, the MAX IInrush 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 IInrush 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] IInrush requirement is 10mA.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7** *P* **66** *L* **15** # 226

Stanford, Clay — Linear Technology

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

With the lower system operating current of 600mA (vs 720mA), voltage at PD due to cable drop 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* **O**

Cl **33** *SC* **33.3.5.1** *P* **63** *L* **45** # 227

maggiolino, joseph — broadcom

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

table 33-14 class 4 29.5w

SuggestedRemedy

table 33-14 class 4 25.5w

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.4.4** *P* **77** *L* **19** # 228

Albert Vareljian — Altera Corp.

Comment Type **E** *Comment Status* **X**

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 fist 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* **O**

Cl **33** *SC* **33.3.1** *P* **57** *L* **42** # 229

Sanita', Gianluca — Nokia Siemens Networ

Comment Type **E** *Comment Status* **X**

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 the 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**

Note: comment type field empty, set to E as a default.

Cl **33** *SC* **33.2.3** *P* **32** *L* **51** # 230

Sanita', Gianluca — Nokia Siemens Networ

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

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 the PSE side.

SuggestedRemedy

Replace:
PSEs shall not operate both Alternative A and Alternative B on the same link segment simultaneosly
With:
Simulaneous operation of Alternative A and Alternative B is out of scope of the standard

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.2** *P* **58** *L* **6** # 231

Sanita', Gianluca — Nokia Siemens Networ

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

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 Data 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 Data 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 will power off."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3** *P* **57** *L* **6** # 232

LANDRY, MATTHEW — SILICON LABS

Comment Type **E** *Comment Status* **X**

"33" is a clause. "33.3" is a subclause.

SuggestedRemedy

Replace "clause" with "subclause."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.4** *P* **61** *L* **22** # 233

LANDRY, MATTHEW — SILICON LABS

Comment Type **E** *Comment Status* **X**

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 is therefore incorrect to specifically refer to "the two voltage/current measurements."

SuggestedRemedy

Delete "the."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.4** *P* **61** *L* **29** # 234

LANDRY, MATTHEW — SILICON LABS

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** SC **33.3.5.2** P**64** L**14** # 235
LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **X**

Title of subsection is "IPD 2-Event class signature"

SuggestedRemedy

Replace "IPD" with "PD."

Proposed Response *Response Status* **O**

Cl **33** SC **33.3.8.1** P**70** L**48** # 236
LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33A** SC **33A** P**117** L**1** # 237
LANDRY, MATTHEW SILICON LABS

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

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* **O**

Cl **33C** SC **33C.1.1** P**122** L**1** # 238
LANDRY, MATTHEW SILICON LABS

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

(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* **O**

Cl **33C** SC **33C.1.2** P**123** L**1** # 239
LANDRY, MATTHEW SILICON LABS

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

(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* **O**

Cl **33C** SC **33C.1.3** P**124** L**1** # 240
LANDRY, MATTHEW SILICON LABS

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

15.4W reference is deprecated.

SuggestedRemedy

Reference PType min.

Proposed Response *Response Status* **O**

Cl **33C** *SC* **33C.1.4** *P* **124** *L* **14** # 241
LANDRY, MATTHEW SILICON LABS

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

This test procedure should be updated to measure inrush performance against IInrush 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* **O**

Cl **33C** *SC* **33C.1.5** *P* **126** *L* **36** # 242
LANDRY, MATTHEW SILICON LABS

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

(1) TPMDO should be TMPDO.

(2) 44V <= VPort <= 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* **O**

Cl **33C** *SC* **33C** *P* **121** *L* **1** # 243
LANDRY, MATTHEW SILICON LABS

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

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 P802.3at 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* **O**

Cl **33D** *SC* **33D** *P* **148** *L* **1** # 244
LANDRY, MATTHEW SILICON LABS

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

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* **O**

Cl **33E** *SC* **33E** *P* **151** *L* **1** # 245
LANDRY, MATTHEW SILICON LABS

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

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* **O**

Cl **33** *SC* **33.3.2** *P* **58** *L* **7** # 246
LANDRY, MATTHEW SILICON LABS

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

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* **O**

Cl **33** *SC* **33.3.4** *P* **61** *L* **12** # 247

LANDRY, MATTHEW SILICON LABS

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

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 B. 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* **O**

Cl **33** *SC* **33.3.5** *P* **63** *L* **15** # 248

LANDRY, MATTHEW SILICON LABS

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

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* **O**

Cl **33** *SC* **33.3.5.1** *P* **63** *L* **33** # 249

LANDRY, MATTHEW SILICON LABS

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

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* **O**

Cl **33** *SC* **33.3.5.2.1** *P* **64** *L* **47** # 250

LANDRY, MATTHEW SILICON LABS

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

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 2-Event class signature shall return a non-valid detection signature ..." is imprecise. It should only 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* **O**

Cl **33** SC **33.3.5.2.2** P **65** L **2** # 251
LANDRY, MATTHEW SILICON LABS

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

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 state variable. The second paragraph can remain as an appendage to 33.3.5.2.1.

Proposed Response *Response Status* **O**

Cl **33** SC **33.3.7** P **66** L **28** # 252
LANDRY, MATTHEW SILICON LABS

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

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* **O**

Cl **33** SC **33.3.7** P **66** L **38** # 253
LANDRY, MATTHEW SILICON LABS

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

VPort_static is undefined.

SuggestedRemedy

Define it, or perhaps replace with the properly intended variable, or fix entire expression.

Proposed Response *Response Status* **O**

Cl **00** SC **00** P L # 254
Jody Williamson Leading Edge Diagnos

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

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 power 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 use 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* **O**

Cl **33** SC **33.2.9** P **48** L **31** # 255
Frosch, Richard Phihong USA

Comment Type **E** *Comment Status* **X**

1. Reference for Icable 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* **O**

Cl **33** SC **33.2.9** P **48** L **48** # 256
Frosch, Richard Phihong USA

Comment Type **E** *Comment Status* **X**

need definition for max

SuggestedRemedy

add see info in max column

Proposed Response *Response Status* **O**

Cl **33** SC **33.2.9.9** P **52** L **15** # 257
Frosch, Richard Phihong USA

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

Is Ilim a minimum or maximum in figure 33-14?

SuggestedRemedy

TBD
According to table 33-9 minimum would be the same as 400/350*Icable which makes Ilim equal to the 1imit from 10ms to Tovldmin which means the graph is wrong.

Maximum makes no sense because maximum is defined by figure 33-14.

Ilim was put somehwere in between the min and max but its not defined properly.

Proposed Response *Response Status* **O**

Cl **33** SC **33.3.5.1** P **63** L **45** # 258
Frosch, Richard Phihong USA

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

Class 4 power in table 33-14 is wrong

SuggestedRemedy

Change 29.5W to 25.5W.

Proposed Response *Response Status* **O**

Cl **33** SC **33.3.7** P **66** L **38** # 259
Frosch, Richard Phihong USA

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

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* **O**

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 prior 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 Ibias which is required for the compliance test were corrected to match Table 33-9 definitions (Ibias vs. Iunb)
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* **O**

Cl **33C** SC **33C.1.4** P **125** L **20** # 270

Darshan, Yair — Microsemi Corporation

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

Draft D3.0
The PSE is not required to support Ctest=1000uF during startup.
PD that use Cpd>180uF is reasponsible to limit Inrush current to 400mA.
PD that use Cpd<=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 required to be in Inrush current limit state for 50msec minimum.
Therfore Ctest is a maximum number for compliance!
Ctest need to be Ctest=Iinrush*TLIM/Vport for mesuring Tinrush (used to be TLIM).
Compliance test equipment should use Ctest that fits the PSE parameters above.

SuggestedRemedy

1. Delete the 1000uF value from Ctest in figure 33C.3
2. Change line 33 item 3 from:
"The capacitive load value Ctest is chosen to emulate inrush current during a startup mode condition.
Ctest is chosen larger than that allowable for Cpd to ensure the PSE stays in inrush current limit for more than 75 ms or until TLIM is reached. Smaller Ctest capacitor values can be used as long as Ctest > (IInrush × TLIM / VPort).

To:
"The capacitive load value Ctest is chosen to emulate inrush current during a startup mode condition.

Ctest is chosen larger than that allowable for Cpd (180uF) to ensure that the PSE under test stays in inrush current limit for at least 50msec.
Ctest is derived from Table 33-9 items 1,6 and 7 of the PSE under test by the following equation: Ctest = (IInrush × TLIM / VPort).

Proposed Response *Response Status* **O**

Cl **33** SC **33.2.9** P **48** L **51** # 271

Darshan, Yair — Microsemi Corporation

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

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* **O**

Cl **99** SC **99** P **1** L **35** # 272

Barrass, Hugh — Cisco

Comment Type **E** *Comment Status* **X**

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 existance 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* **O**

Cl **99** *SC* **99** *P* **2** *L* **17** # 273

Barrass, Hugh Cisco

Comment Type **E** *Comment Status* **X**

"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* **O**

Cl **01** *SC* **01.4** *P* **13** *L* **28** # 274

Barrass, Hugh Cisco

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

"A PSE or PD that is designed for IEEE Std 802.3™-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 802.3™-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* **O**

Cl **01** *SC* **01.4** *P* **13** *L* **30** # 275

Barrass, Hugh Cisco

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

"A PSE or PD that is designed for IEEE Std 802.3™-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 802.3™-2005 power levels"

with

"A PSE or PD that is designed for power levels greater than 12.95W (at the PD)"

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.2.5** *P* **15** *L* **33** # 276

Barrass, Hugh Cisco

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

Table 30-5a

The following objects should all be GET-SET

aLLDPPoEPLocRequestedPowerSource
aLLDPPoEPLocRequestedPDPowerValue

aLLDPPoEPLocAcknowledge

SuggestedRemedy

The change GET to GET-SET for the following objects

aLLDPPoEPLocRequestedPowerSource
aLLDPPoEPLocRequestedPDPowerValue

aLLDPPoEPLocAcknowledge

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.1.1.3** *P* **17** *L* **29** # 277
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **X**
aLLDPPoEPLocRequestedPowerSource

Needs a SET definition

SuggestedRemedy
After the "GET" line, insert

"A SET operation changes the requested priority of the local system to the indicated value.;"

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.1.1.5** *P* **18** *L* **3** # 278
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **X**
aLLDPPoEPLocRequestedPDPowerValue

Needs a SET definition

SuggestedRemedy
After the "GET" line, insert

"A SET operation changes the requested power value of the local system to the indicated value.;"

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.1.1.10** *P* **19** *L* **6** # 279
Barrass, Hugh Cisco

Comment Type **T** *Comment Status* **X**
aLLDPPoEPLocAcknowledge

Needs a SET definition

SuggestedRemedy
After the "GET" line, insert

"A SET operation asserts "loss of communication", "acknowledge" or "non-acknowledge" for the local system to the indicated value.;"

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.1.1.6** *P* **18** *L* **12** # 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* **30.12.1.1.7** *P* **18** *L* **21** # 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* **30.12.1.1.8** *P* **18** *L* **30** # 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**

Cl **30** *SC* **30.12.1.1.9** *P* **18** *L* **40** # 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* **30.12.1.1.11** *P* **19** *L* **12** # 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* **30.12.2.1.10** *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**

Cl **33** *SC* **33.7.6.5** *P* **97** *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** *P* **96** *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 as getting a "NACK"

SuggestedRemedy
Change "locAcknowledge = NACK"

to "(locAcknowledge = NACK) + (remRequestedPowerValue != remActualPowerValue)"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.6.5** *P* **97** *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 as getting a "NACK"

SuggestedRemedy

Change "locAcknowledge = NACK"

to "(locAcknowledge = NACK) + (remRequestedPowerValue != remActualPowerValue)"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.6.5** *P* **96** *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**

Cl **33** *SC* **33.7.6.5** *P* **97** *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**

Cl **33** *SC* **33.7.6.2** *P* **94** *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.; bits 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 15:0 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 the Requested power type/source/priority value defined in 33.7.2.1 bit 7 mapping to bit 23, etc.; bits 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* **O**

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* **O**

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* **O**

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* **O**

Cl **33** *SC* **33.8** *P* **100** *L* **12** # 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 on 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 PSE validation process.

I'm trying to see the philosophy behind this behavior. It seems that the PSE is enforcing the PD 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 faulty 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 on 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**

Cl **33** *SC* **33.1** *P* **25** *L* **52** # 300
Frank , Yang CommScope

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

... 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 perspectively.

SuggestedRemedy

... shall consist of Category 5e or better components as specified...

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1** *P* **23** *L* **15** # 301
Vetteth, Anoop Cisco

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.2.4.5** *P* **35** *L* **47** # 302
Vetteth, Anoop Cisco

Comment Type **E** *Comment Status* **X**

Referece to Table 33-9 for tpdc_timer (Tpdc). This parameter is actually defined in Table 33-8

SuggestedRemedy

Change reference to Table 33-8

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **39** *L* **8** # 303
Vetteth, Anoop Cisco

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.2.4.7** *P* **39** *L* **17** # 304
Vetteth, Anoop Cisco

Comment Type **E** *Comment Status* **X**

"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* **O**

Cl **33** *SC* **33.2.5** *P* **41** *L* **39** # 305
Vetteth, Anoop Cisco

Comment Type **E** *Comment Status* **X**

PSE operation is now dependent on Link

SuggestedRemedy

Strike this sentence

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.3.5** *P* **60** *L* **5** # 306
Vetteth, Anoop Cisco

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.3.7.4** *P* **68** *L* **16** # 307

Vetteth, Anoop Cisco

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.3.8.1** *P* **70** *L* **50** # 308

Vetteth, Anoop Cisco

Comment Type **E** *Comment Status* **X**

Rch is wrong

SuggestedRemedy

change Rch to Rch/2

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4.2** *P* **26** *L* **9** # 309

Vetteth, Anoop Cisco

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

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* **O**

Cl **33** *SC* **33.2.4.7** *P* **39** *L* **47** # 310

Vetteth, Anoop Cisco

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

One of the criterion for state transition from "POWER_ON" state to "IDLE" state is (pse_enable = force_power). This means that if no timers expire and force_power is asserted when the port 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* **O**

Cl **33** *SC* **33.2.4.7** *P* **40** *L* **35** # 311

Vetteth, Anoop Cisco

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

The variable "do_classification_done" has not been defined

SuggestedRemedy

Define "do_classification_done" in section 33.2.4.6

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.9** *P* **48** *L* **31** # 312

Vetteth, Anoop Cisco

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

Table 33-9 item 5
Maximum output current in POWER_ON mode Iport_max_min is not Icable. It is dependent on the class of the PD.

SuggestedRemedy

Change Icable to Pclass/Vport

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.9.4** *P* **50** *L* **13** # 313

Vetteth, Anoop Cisco

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

Iport_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* **O**

Cl **33** *SC* **33.2.9.5** *P* **50** *L* **19** # 314

Vetteth, Anoop Cisco

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

One of my earlier comments is to change item 5 in table 33-9 Iport_max min from Icable 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* **O**

Cl **33** *SC* **33.2.9.6** *P* **51** *L* **8** # 315

Vetteth, Anoop Cisco

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

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* **O**

Cl **33** *SC* **33.3.7** *P* **66** *L* **37** # 316

Vetteth, Anoop Cisco

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

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 x Vport_min with
Pport_max / Vport_min x Voverload_min

Pport_max/Vport_min x 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* **O**

Cl **33** *SC* **33.3.7.5** *P* **69** *L* **35** # 317

Vetteth, Anoop Cisco

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

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 Cport > 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.1

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7.6** *P* **69** *L* **44** # 318

Vetteth, Anoop Cisco

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

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* **O**

Cl **33** *SC* **33.2.9.9** *P* **51** *L* **28** # 319

Vetteth, Anoop Cisco

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

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 PI.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4** *P* **25** *L* **43** # 320

Vetteth, Anoop Cisco

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

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* **O**

Cl **33** *SC* **33.2.4.7** *P* **39** *L* **48** # 321

Vetteth, Anoop Cisco

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

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 Iinrush. In the existing middle diagram, remove the reference to Iinrush. This diagram then only monitors ILIM.
On figure 33-9, move tlim_timer_done to the TLIM monitoring branch.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8** *P* **46** *L* **37** # 322

Vetteth, Anoop Cisco

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

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* **O**

Cl **33** *SC* **33.2.9** *P* **48** *L* **42** # 323
Vetteth, Anoop Cisco

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

Table 33-9 Item 10
ILIM_min for type 2 PSE is defined as (400/350)x(Pport/Vport). 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)xIcable

SuggestedRemedy

Change (400/350)x(Pport/Vport) to (400/350)xIcable

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.9** *P* **48** *L* **42** # 324
Vetteth, Anoop Cisco

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

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* **O**

Cl **33** *SC* **33.3.7** *P* **66** *L* **15** # 325
Vetteth, Anoop Cisco

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

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 Icable

SuggestedRemedy

Define:
Vport min = 50 - RchxIcable/2
Voverload min = 50 - RchxIcablex200/350

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.9** *P* **48** *L* **42** # 326
Vetteth, Anoop Cisco

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

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)xIcable and PSE upper bound tempelate

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 tempelate.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **39** *L* **46** # 327
Vetteth, Anoop Cisco Systems

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

pse_enable does not exist.

SuggestedRemedy

Replace pse_enable with mr_pse_enable.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **40** *L* **32** # 328
Vetteth, Anoop Cisco Systems

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

Variable do_classification_done is not defined.

SuggestedRemedy

Define do_classification_done.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.9.8** *P* **51** *L* **20** # 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 minium current the PSE shall provide and to show what maximum current a PD may demand.

On figure 33-14:
- Replace the PD boundary label 400/350xIcable with Ipeak that is given by equation 33-1.

- Replace the PD boundary labeled Icable 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* **O**

Cl **33** *SC* **33.3.3.5** *P* **60** *L* **2** # 330

Vetteth, Anoop — Cisco Systems

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

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* **O**

Cl **33** *SC* **33.2.3** *P* **32** *L* **49** # 331

Young, George — AT&T

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.1.3** *P* **25** *L* **10** # 332

Young, George — AT&T

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

In Figure 33-3, the depiction of the PI interface is misleading. The arrow associated with the PI 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* **O**

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 choosen to insert a limit in the 2 X TTL timer range which can be very 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**

Cl **33** SC **33.7.5** P **95** L **51** # 338
sastry, ramesh Cisco Systems

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

Add the following line after line 52

SuggestedRemedy

The 5 minutes has been choosen to insert a limit in the 2 X TTL timer range which can be very 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**

Cl **33** SC **33.7.8** P **99** L **28** # 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 99.

Proposed Response *Response Status* **O**

Cl **33** SC **33.3.2** P **57** L **52** # 340
sastry, ramesh Cisco Systems

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

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* **O**

Cl **33** SC **33.7.6.5** P **96** L **23** # 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**

Cl **33** SC **33.7.2** P **89** L **40** # 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**

Cl **33** *SC* **33.7.2.1.1** *P* **89** *L* **49** # 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**

Cl **33** *SC* **33.7.5** *P* **92** *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 minutes 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* **O**

Cl **33** *SC* **33.7.6.3** *P* **95** *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 a 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 after 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* **O**

Cl **33** *SC* **33.7.6.3** *P* **95** *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 after a
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 0.75 - 1.0 sec shall be used.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.8** *P* **100** *L* **1** # 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 the 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 prsented

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 different power value via Data Link Layer communication.

After Data Link Layer communication has been established there are three scenarios that may 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 × remote TTL) or 5 minutes, a 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 33-22 . 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 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 min value as specified in Table-33-18.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.6.5** *P* **96** *L* **8** # 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**

Cl **33** *SC* **33.7.6.5** *P* **97** *L* **3** # 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**

Cl **33** *SC* **33.7.6.5** *P* **96** *L* **33** # 350

sastry, ramesh Cisco Systems

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

Add the following to detect the collsion
in the Local Request state (line 30) in the NACK branch

SuggestedRemedy

locAcknowledge = NACK
(remRequestedPowerValue NOT= remActualPowerValue)

Proposed Response *Response Status* **O**

Cl **33** SC **33.7.6.5** P **97** L **28** # 351

sastry, ramesh Cisco Systems

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

Add the following to detect collsion 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 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.

Proposed Response *Response Status* **O**

Cl **33** SC **33.7.2.1.1** P **90** 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 min value as specified in Table-33-18.

Proposed Response *Response Status* **O**

Cl **33** SC **33.1.4** P **25** L **41** # 355

Pavlick Rimboim Microsemi corp.

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

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* **O**

Cl **33** *SC* **33.2.8** *P* **46** *L* **44** # 356

Hopwood, Keith — Phihong

Comment Type **E** *Comment Status* **X**

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**

CommentType field empty, set to E as default

Cl **33** *SC* **33.3.5.1** *P* **63** *L* **45** # 357

Hopwood, Keith — Phihong

Comment Type **E** *Comment Status* **X**

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**

CommentType field empty, set to E as default

Cl **99** *SC* **99** *P* **2** *L* **2** # 358

Piers Dawe — Avago Technology

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **99** *SC* **99** *P* **2** *L* **17** # 359

Piers Dawe — Avago Technology

Comment Type **E** *Comment Status* **X**

This isn't Draft 2.1

SuggestedRemedy

Update

Proposed Response *Response Status* **O**

Cl **99** *SC* **99** *P* **3** *L* **27** # 360

Piers Dawe — Avago Technology

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **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 the 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* **O**

Cl **99** *SC* **99** *P* **5** *L* **32** # 362
Piers Dawe Avago Technology

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **99** *SC* **99** *P* **6** *L* **1** # 363
Piers Dawe Avago Technology

Comment Type **E** *Comment Status* **X**

Waste of paper. This document insists on starting new clauses on even numbered pages, as if 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* **O**

Cl **01** *SC* **1.3** *P* **13** *L* **11** # 364
Piers Dawe Avago Technology

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

As http://ieee802.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/JTC001-N-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* **O**

Cl **01** *SC* **1.4** *P* **13** *L* **18** # 365
Piers Dawe Avago Technology

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

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* **O**

Cl **01** *SC* **1.4** *P* **13** *L* **19** # 366
Piers Dawe Avago Technology

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **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**

Cl **30** SC **30.2.5** P **15** 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**

Cl **30** SC **30.2.5** P **15** 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**

Cl **30** SC **30.2.5** P **293** 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**

Cl **30** SC **30.2.5** P **291** 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**

Cl **30** SC **30.12.1.1.11** P **19** 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**

Cl **30** SC **30.12.2.1.10** P **21** 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**

Cl **33** *SC* **33.1** *P* **23** *L* **33** # 374
Piers Dawe Avago Technology

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

Text says 'The detection and powering algorithms are likely to be compromised by cabling that 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* **O**

Cl **33** *SC* **33.1** *P* **23** *L* **33** # 375
Piers Dawe Avago Technology

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

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* **O**

Cl **33** *SC* **33.1.1** *P* **23** *L* **44** # 376
Piers Dawe Avago Technology

Comment Type **E** *Comment Status* **X**

A PD ... need no

SuggestedRemedy

A PD ... needs no

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.1** *P* **23** *L* **47** # 377
Piers Dawe Avago Technology

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

'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* **O**

Cl **33** *SC* **33.1.3** *P* **24** *L* **18** # 378
Piers Dawe Avago Technology

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

Don't use ALL CAPITALS

SuggestedRemedy

Change to upper and lower case as appropriate - three figures here

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.3** *P* **24** *L* **18** # 379
Piers Dawe Avago Technology

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

Font too small

SuggestedRemedy

Change 7 point to 8 point - three figures here

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.3** *P* **25** *L* **8** # 380
Piers Dawe Avago Technology

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

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 is the norm, then the midspan PSE has two interfaces, a MDI and a MDI/PI.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4** *P* **25** *L* **32** # 381
Piers Dawe Avago Technology

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

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* **O**

Cl **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**

Cl **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**

Cl **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**

Cl **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 an 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**

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 EEE 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™ 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 PMD-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* **X**

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* **O**

Cl **33F** *SC* **33F.1.1** *P* **153** *L* **28** # 390
Piers Dawe Avago Technology

Comment Type **E** *Comment Status* **X**

Test case 1, Test case 2

SuggestedRemedy

Test Case 1, Test Case 2 ?

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4** *P* **25** *L* **40** # 391
Piers Dawe Avago Technology

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

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* **O**

Cl **33** SC **33.1.4.1** P **25** L **52** # 392
Piers Dawe Avago Technology

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

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* **O**

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* **O**

Cl **33** SC **33.2.1** P **27** L **19** # 394
Piers Dawe Avago Technology

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

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* **O**

Cl **33** SC **33.2.2** P **27** L **34** # 395
Piers Dawe Avago Technology

Comment Type **E** *Comment Status* **X**

Midspan

SuggestedRemedy

Midspan PSE (or midspan entity)

Proposed Response *Response Status* **O**

Cl **33** SC **33.2.8** P **44** L **33** # 396
Piers Dawe Avago Technology

Comment Type **E** *Comment Status* **X**

Table 33-6 is mentioned here, before Table 33-5 and again on line 44 yet it does not appear until the and of page 46

SuggestedRemedy

Move its anchor earlier

Proposed Response *Response Status* **O**

Cl **33** SC **33.3.4** P **61** L **34** # 397
Piers Dawe Avago Technology

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **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 tolerancing evolves gradually over time. A spec with tolerances gets us into a silly game of double bluff: If 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* **O**

Cl **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* **O**

Cl **33** SC **33.4.8** P **79** L **31** # 400
Piers Dawe Avago Technology

Comment Type **E** *Comment Status* **X**

Midspan insertion configuration

SuggestedRemedy

Midspan PSE insertion configuration

Proposed Response *Response Status* **O**

Cl **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**

Cl **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**

Cl **33** SC **33.2.4.1** P **33** L **34** # 403
Lynskey, Eric Teknovus

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

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 within 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* **O**

Cl **01** *SC* **1.4** *P* **13** *L* **28** # 404

Booth, Brad AMCC

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

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* **O**

Cl **33** *SC* **33.1.4.1** *P* **25** *L* **50** # 405

Booth, Brad AMCC

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

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* **O**

Cl **01** *SC* **1.4** *P* **13** *L* **30** # 406

Zimmerman, George Solarflare Communicat

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.2** *P* **27** *L* **6** # 407

Zimmerman, George Solarflare Communicat

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 needs 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 to be modified as well to indicate where a PD may be attached. At a maximum, consider using link segment terminology where appropriate.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **34** *L* **45** # 408

Zimmerman, George Solarflare Communicat

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.2.3** *P* **32** *L* **52** # 409

Zimmerman, George Solarflare Communicat

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

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 whereever 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* **O**

Cl **33** *SC* **33.9** *P* **105** *L* **34** # 410
Zimmerman, George Solarflare Communicat

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

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* **O**

Cl **33E** *SC* **33E** *P* **151** *L* **15** # 411
Zimmerman, George Solarflare Communicat

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

"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* **O**

Cl **33** *SC* **33.1.1** *P* **23** *L* **48** # 412
Zimmerman, George Solarflare Communicat

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 teh 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 maintainence to work this issue at the MDI.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4** *P* **25** *L* **45** # 413
Zimmerman, George Solarflare Communicat

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

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 text 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 (prefered for clarity, if not for wordiness).

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.2.4** *P* **33** *L* **3** # 414
Zimmerman, George Solarflare Communicat

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

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**

Cl **33** *SC* **33.2.9.13** *P* **53** *L* **25** # 415

Zimmerman, George — Solarflare Communicat

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

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 teh 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 maintainence to work this issue by providing a specification of the 100BASE-TX signal at the MDI.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.9** *P* **48** *L* **38** # 416

Stanford, Clay — Linear Technology

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.3.7.4** *P* **68** *L* **16** # 417

Stanford, Clay — Linear Technology

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.7.5** *P* **91** *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**

Cl **33** *SC* **33.7.7** *P* **97** *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** *P* **48** *L* **42** # 420

Stanford, Clay Linear Technology

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

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) × (PPort/VPort) to "See info"

TESX SHOULD BE:
Type 1: (400/350) × Icable to .45A
Type 2: (400/350) × Icable to "See info"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7** *P* **66** *L* **22** # 421

Stanford, Clay Linear Technology

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

With the reduction of Icable from .720 to .600 A, input voltages for PD are affected.

Table 33-17, Item 3, Input voltage range during overload
Is 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 miminum
SHOULD BE:
41.4V minimum

Proposed Response *Response Status* **O**

Cl **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

TEXT IS:
A PSE may remove power from the PI if the PI current meets or 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.

TEXT SHOULD BE:
A PSE shall limit the PI current (ILim) to a value between the PSE upper and lower bound templates as shown in figure 33-14.

The PSE shall limit the current for a period of Tolvd, after which the PSE shall remove power from the port.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.9.9** *P* **52** *L* **1** # 423

Stanford, Clay — Linear Technology

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

Figure 33-14 is unclear and contains errors. Redraw.

SuggestedRemedy

Anoop to supply figure.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7** *P* **66** *L* **37** # 424

Stanford, Clay — Linear Technology

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

Table 33-17, Item 7, Peak Operating power, Class 4

Maximum value has formula:

(400/350) x (Pport max / Vport_static min) x (Vport min)

Vport_static isn't a defined parameter.

SuggestedRemedy

Correct formula as desired.

Proposed Response *Response Status* **O**

Cl **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 secconds. Do not remove port power if MPS is present but DLL is absent.

Proposed Response *Response Status* **O**

Cl **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**

Cl **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**

Cl **33** *SC* **33.3.5.1** *P* **63** *L* **45** # 428

Stanford, Clay Linear Technology

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

Table 33-14 PD Power Classification

Class 4 still references 29.5W

Change to 25.5W or Icable * Vport

SuggestedRemedy

Change 29.5W to 25.5W

Proposed Response *Response Status* **O**

Cl **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**

Cl **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 × 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**

Cl **33** *SC* **33.2.9** *P* **49** *L* **18** # 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 is 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 Ilp1 mA 0 1 Relevant for 33.2.11.1.2.
PSE removes power

d) LOW POWER state current 2 Ilp2 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 Ilp2 max. A PSE may consider the DC MPS component to be present or absent if the DC current is in the range Ilp2. A PSE shall consider the DC MPS component to be absent when it detects a DC current in the range Ilp1. Power shall be removed from the PI when DC MPS has been absent for a duration greater than TMPDO.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.8** *P* **70** *L* **40** # 432

Barrass, Hugh Cisco

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

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* **O**

Cl **33** *SC* **33.7.2.1** *P* **90** *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 a minimal level and will be reducing its power draw.

This uses one of the bits in the power sourcse/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 attemoting 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** *P* **100** *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**

Cl **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**

Cl **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 × 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 × 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**

Cl **33** *SC* **33.9.2.3** *P* **102** *L* **7** # 437

Barrass, Hugh Cisco

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

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* **O**

Cl **33** *SC* **33.9.3.9** *P* **112** *L* **31** # 438

Barrass, Hugh Cisco

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

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* **O**

Cl **33** *SC* **33.7.5** *P* **92** *L* **41** # 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 recomended 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**

Cl **33** SC **33.7.5** P **92** 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 rapidly 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 rapidly 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**

Cl **33** SC **33.2.9.9** P **52** L **1** # 441

Vetteth, Anoop Cisco

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

Figure 33-14
Suggest modification to make it clearer

SuggestedRemedy

See attached graph

Proposed Response *Response Status* **O**

Cl **33** SC **33.3.5.1** P **63** L **46** # 442

Vetteth, Anoop Cisco

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

Table 33-14
Power corresponding to class 4 has not been updated

SuggestedRemedy

Change 29.5W to 25.5W

Proposed Response *Response Status* **O**

Cl **33** SC **33.2.8.2** P **46** L **36** # 443

Vetteth, Anoop Cisco

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

Table 33-6
Pclass has fixed values for the different classes. We changed the overload current on page 50 (Ipeak) 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 x [Vport - sqrt(Vport^2 - 2 x Rch x Pclass_pd)] / Rch

A type 1 PSE can treat Class 4 as Class 0 so I dont think we need to differentiate between tpe 1 and type 2 PSEs for class 4

Replace Rch in eq 33-1 with Rch/2

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7.5** *P* **69** *L* **1** # 444

Vetteth, Anoop — Cisco

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

Figure 33-18
The current during overload has been defined as (400/350)x(Pport max/Vport)

This is wrong for class 1 and class 2

SuggestedRemedy

Change the value to (Ppeak/Voverload)

Need to define somewhere that Ppeak = (Pclass/Vport) x (400/350) for the class power negotiated over layer 2

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.3** *P* **32** *L* **49** # 445

McCormack, Michael — Texas Instruments

Comment Type **E** *Comment Status* **X**

The phrase "provided the PSE meets the contraints of 33.2.4" is misleading, there are other PSE shall statements in the document

SuggestedRemedy

Strike the phrase

Proposed Response *Response Status* **O**

Cl **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 seperated by just a few lines but is entirely on another page.

SuggestedRemedy

Reformat the text

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4.1** *P* **25** *L* **52** # 447

McCormack, Michael — Texas Instruments

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

Category 5e can be bettered,

SuggestedRemedy

Catrgory 5e or better

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.7** *P* **40** *L* **11** # 448

McCormack, Michael — Texas Instruments

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

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* **O**

Cl **33C** *SC* **33C** *P* **121** *L* **1** # 449

McCormack, Michael — Texas Instruments

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

The 802.3 Workign Group dropped support for test procedures, we should also.

SuggestedRemedy

Remove Annex 33C

Proposed Response *Response Status* **O**

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 some set of device, what PD is on the link. Please add a TLV to allow the identiciation of the PD, it can be a manufacturer assigned code. This should also include fields that indetify the average 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 - bolean

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7** *P* **66** *L* **23** # 451

Jones, Chad — Cisco

Comment Type **E** *Comment Status* **X**

Table 33-17, item 4.
Adding the variable Icable has made our life easier by only having to change the number in one spot but it has made the document harder to read. I got here from a reference on page 58, line 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 additionaly information for Item 4 Table 33-17.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.7** *P* **66** *L* **38** # 452

Jones, Chad — Cisco

Comment Type **E** *Comment Status* **X**

Table 33-17 Item 7

Vport_staticmin is undefined. I searched the doc and only find this one instance of the variable.

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* **O**

Cl **33** *SC* **33.3.5.2** *P* **64** *L* **14** # 453

Jones, Chad — Cisco

Comment Type **E** *Comment Status* **X**

Typo in heading:

"33.3.5.2 IPD 2-Event class signature" - stray I in front of PD.

SuggestedRemedy

change to: "33.3.5.2 PD 2-Event class signature"

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.3.5.2** *P* **64** *L* **20** # 454

Jones, Chad — Cisco

Comment Type **E** *Comment Status* **X**

"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 of the document.

SuggestedRemedy

Strike the sentence.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8** *P* **44** *L* **53** # 455

Jones, Chad Cisco

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

"If a PSE successfully completes detection of a PD, but the PSE fails to complete classification of a PD, then a Type 1 PSE shall assign the PD to Class 0; 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 are doing it again here. The proper way to future proof the standard is define this as a non-powered 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* **O**

Cl **33** *SC* **33.2.8.2** *P* **46** *L* **16** # 456

Jones, Chad Cisco

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

"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-powered 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* **O**

Cl **33** *SC* **33.2.8** *P* **45** *L* **12** # 457

Jones, Chad Cisco

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

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* **O**

Cl **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 reaarange 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 whould 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

Cl **33** *SC* **33.2** *P* **27** *L* **3** # 459

Geoff, Thompson Nortel

Comment Type **E** *Comment Status* **X**

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**

CommentType empty, set to E as default

Cl **33** *SC* **33.2.8** *P* **44** *L* **30** # 460

Geoff, Thompson Nortel

Comment Type **E** *Comment Status* **X**

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**

CommentType empty, set to E as default

Cl **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**

Cl **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**

Cl **33** *SC* **33.1.1** *P* **23** *L* **52** # 463

Geoff, Thompson Nortel

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.1.4.2** *P* **26** *L* **6** # 464

Geoff, Thompson Nortel

Comment Type **E** *Comment Status* **X**

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 ambient 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* **O**

Cl **33** *SC* **33.2.4.5** *P* **35** *L* **50** # 465

Geoff, Thompson Nortel

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** *SC* **33.2.4.7** *P* **38** *L* **8** # 466

Geoff, Thompson Nortel

Comment Type **E** *Comment Status* **X**

It looks like the size of Figure 33-9 is such that it will guarantee that the heading "33.2.4.7 State 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* **O**

Cl **00** *SC* **00** *P* *L* # 467

Geoff, Thompson Nortel

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

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 the 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* **O**

Cl **99** *SC* **99** *P* *L* # 468

Geoff, Thompson Nortel

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

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 that 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 as 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* **O**

Cl **33** *SC* **33** *P* **23** *L* **1** # 469

Geoff, Thompson Nortel

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

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
(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* **O**

Cl **01** *SC* **1.4** *P* **13** *L* **30** # 470

Geoff, Thompson Nortel

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

The text: "...for greater than IEEE Std 802.3™-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* **O**

Cl **30** SC **30.2.5** P **16** L **36** # 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** P **17** L **22** # 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 sytax 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** P **19** L **5** # 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** P **25** L **52** # 474
Geoff, Thompson Nortel

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

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* **O**

Cl **33** SC **33.1.4.2** P **26** L **10** # 475
Geoff, Thompson Nortel

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

It is an insult to us to call non-compliant systems "these alternate PoE system implementations."

SuggestedRemedy

Change text to read: "these alternate power system implementations."

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.8** *P* **44** *L* **36** # 476

Geoff, Thompson Nortel

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

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 the 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* **O**

Cl **30** *SC* **30.12.1.1.11** *P* **19** *L* **12** # 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** *P* **13** *L* **11** # 478

Geoff, Thompson Nortel

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

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, thensubmit 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 relevants parameters and their validity (with appropriate documentation) within 802.3 and then use the home grown numbers.

Proposed Response *Response Status* **O**

Cl **30** *SC* **30.12.1.1.1** *P* **17** *L* **3** # 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** *P* **27** *L* **10** # 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 connector" 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 included withn the PSE spec and belong on the PSE side of the PI

SuggestedRemedy

Delete the second sentence.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.1** *P* **30** *L* **7** # 481

Geoff, Thompson Nortel

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

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* **O**

Cl **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 (48 volt nominal) commonly found in telephone installations and DC communications UPS systems. 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 porposed 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* **O**

Cl **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 to 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 maiximum alignment with the existing Layer Management and amend the existing Layer Management for PoE so that it can approporately cover both PoE and PoE Plus.

Proposed Response *Response Status* **O**

Cl **00** *SC* **00** *P* *L* # 484

Geoff, Thompson Nortel

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

The text provided for managment 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* **O**

Cl **01** *SC* **1.4** *P* **13** *L* **28** # 485

Ganga, Ilango Intel

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **30** *SC* **30.2.5** *P* **16** *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**

Cl **33** *SC* **33.9.3.2** *P* **103** *L* **26** # 487

Ganga, Ilango Intel

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **30** *SC* **30.12.2.1.9** *P* **21** *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**

Cl **33** *SC* **33.1.4.1** *P* **25** *L* **52** # 489
Ganga, Ilango Intel

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

PICS missing for 33.1.4.1 Type 2 cabling requirement

SuggestedRemedy

Add PICS for 33.1.4.1

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.4.4** *P* **35** *L* **47** # 490
Ganga, Ilango Intel

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

PICS missing for PSE shall meet at least one allowable variable..

SuggestedRemedy

Add corresponding PICS

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.9.3.2** *P* **104** *L* **4** # 491
Ganga, Ilango Intel

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

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* **O**

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 other 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* **X**

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**

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.

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* **O**

Cl **01** *SC* **01.3** *P* **13** *L* **7** # 497
Diab, Wael Broadcom

Comment Type **E** *Comment Status* **X**

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* **O**

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* **33.1.1** *P* **24** *L* **1** # 499
Diab, Wael Broadcom

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

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* **O**

Cl **33** *SC* **33.1.4** *P* **25** *L* **44** # 500
Diab, Wael Broadcom

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

Table 33-1
The cabling type in this table is ambigious.

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* **O**

Cl **33** SC **33.1.4.1** P **26** L **1** # 501
Diab, Wael Broadcom

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

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* **O**

Cl **33** SC **33.2.2** P **27** L **28** # 502
Diab, Wael Broadcom

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

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 comprimise the integrity of the channel or modify the characteristics of 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 identicle to that without a midspan for a 100BASE-TX link or a 1000BASE-T link.

Proposed Response *Response Status* **O**

Cl **33** SC **33.1.4.2** P **26** L **9** # 503
Diab, Wael Broadcom

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

This note has some innacuracy and does not add any value. Moreover, it is restructing in terms of what implementations out of the scope can and cannot do. For instance it talks about cables not cabling systems which would include connectors. Furthermore, I would expect the TR being referenced to discuss the parameters underwhich the derating points were given.

SuggestedRemedy

Please delete the NOTE.

Proposed Response *Response Status* **O**

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* **O**

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 identicle 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* **X**
The information in the note is provided in 33.1.4.1.

SuggestedRemedy
Delete Note

Proposed Response *Response Status* **O**

Cl **33** SC **33.1.4.2** P **26** L **8** # 508
DiMinico, Chris MC Communications

Comment Type **E** *Comment Status* **X**
The note does not provide useful information

SuggestedRemedy
Delete Note

Proposed Response *Response Status* **O**

Cl **33** SC **33.1.2.4** P **26** L **6** # 509
DiMinico, Chris MC Communications

Comment Type **T** *Comment Status* **X**
The type 2 cable derating requirement is not clearly addressed in the statement “Type 2 operation requires a 10°C reduction in the maximum ambient operating temperature of the cable”. This requirement is a severe constraint to 802.3ap deployment. Detailed guidance should be provided including PoE implementation considerations. Either address these considerations in reference documents and point to the reference (e.g., ISO/IEC TR 29125 or TR42-TSB) or create and 802.3 Annex

SuggestedRemedy
Delete: Type 2 operation requires a 10°C reduction in the maximum ambient operating temperature of the cable (see ISO/IEC TR 29125).

Add: Considerations for the ambient operating temperature of Type 2 cable for 802.3ap applications are addressed in ISO/IEC TR 29125 or TBD appropriate reference.

Proposed Response *Response Status* **O**

Cl **01** SC **1.3** P **13** L **11** # 510
Law, David 3Com

Comment Type **E** *Comment Status* **X**
A draft of ISO/IEC TR 29125 has been issued designated ISO/IEC JTC 1/SC 25 N 874.

SuggestedRemedy
Change ISO/IEC JTC 1/SC 25 N XXXX.X. to read ISO/IEC JTC 1/SC 25 N 874.

Proposed Response *Response Status* **O**

Cl **33** SC **33.1.1** P **23** L **23** # 511
Law, David 3Com

Comment Type **E** *Comment Status* **X**
We normally say beyond the scope of the standard.

SuggestedRemedy
Change '... beyond the scope of the clause.' to read 'beyond the scope of the standard.'.

Proposed Response *Response Status* **O**

Cl **33** SC **33.2** P **27** L **3** # 512
Law, David 3Com

Comment Type **E** *Comment Status* **X**
We don't really supply power to the link section, well a wee bit due to cable heating I guess, but the real purpose is to provide power to the PD.

SuggestedRemedy
Consider rephrasing where we state that power is supplied to the link section.

Proposed Response *Response Status* **O**

Cl **33** SC **33.2.9.7** P **51** L **10** # 513
Law, David 3Com

Comment Type **E** *Comment Status* **X**
Any reason why this equation isn't numbered.

SuggestedRemedy
See comment.

Proposed Response *Response Status* **O**

Cl **33** SC **33.1.4.2** P **26** L **10** # 514
Law, David 3Com

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

We don't use the term PoE in thius 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* **O**

Cl **00** SC **00** P L # 515
Law, David 3Com

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

We should state in the refernce to Figures 33-4 through 33-7 that these are illistrative 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* **O**

Cl **33** SC **33.7.2.1** P **89** 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** P **25** L **43** # 517
Law, David 3Com

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

I believe that a Type 1 and Type 2 system are only defined by the maximum DC cable current. The two other parameter 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 parameter 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* **O**

Cl **33** SC **33.1.4** P **25** L **43** # 518
Law, David 3Com

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

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 of less. This fact should be footnoted.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.1.4.1** *P* **25** *L* **50** # 519

Law, David 3Com

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

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 that 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* **O**

Cl **33** *SC* **33.1.4.1** *P* **26** *L* **1** # 520

Law, David 3Com

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

I believe that ISO/IEC 11801:1995 Class D cabling, including a channel DC loop resistance of 25 Ohms, is equivalent 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* **O**

Cl **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**

Cl **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 PD 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 may 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 problems 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 inductances 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* **O**

Cl **33** *SC* **33.2.9** *P* **48** *L* **45** # 523

Schindler, Fred Cisco Systems

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

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* **O**

Cl **33** SC **33.2.5** P **41** L **39** # 524
Schindler, Fred Cisco Systems

Comment Type **E** *Comment Status* **X**

The sentence "PSE operation is independent of dat link status." is no longer valid.

SuggestedRemedy

Strike the sentence.

Proposed Response *Response Status* **O**

Cl **33** SC **33.2.9.9** P **51** L **33** # 525
Schindler, Fred Cisco Systems

Comment Type **E** *Comment Status* **X**

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* **O**

Cl **33** SC **33.1.4** P **25** L **45** # 526
Schindler, Fred Cisco Systems

Comment Type **E** *Comment Status* **X**

The IEEE normally references international standards.

SuggestedRemedy

Replace CAT-3 with class C.

Proposed Response *Response Status* **O**

Cl **33** SC **33.2.9.5** P **50** L **25** # 527
Schindler, Fred Cisco Systems

Comment Type **E** *Comment Status* **X**

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 tovld.

Proposed Response *Response Status* **O**

Cl **33** SC **33.2.9.12** P **53** L **19** # 528
Schindler, Fred Cisco Systems

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

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* **O**

Cl **33** SC **33.2.4.1** P **33** L **24** # 529
Schindler, Fred Cisco Systems

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

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* **O**

Cl **33** *SC* **33.2.4.7** *P* **40** *L* **34** # 530
Schindler, Fred Cisco Systems

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

Variable do_classification_done is not defined.

SuggestedRemedy

Define do_classification_done.

Proposed Response *Response Status* **O**

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 x 0.8 = 45.6 V

45.6/10 = time = 4.6 us

The new value speeds up the voltage ramp.

SuggestedRemedy

Decrease the maximum from 10 to

57Vx0.8/15us = 3 V/us

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.4.4** *P* **74** *L* **42** # 532
Schindler, Fred Cisco Systems

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

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* **O**

Cl **33** *SC* **33.2.4.6** *P* **41** *L* **3** # 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 duty 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 cycle before Tp expires, a FAULT condition exists.

To monitor Tovld, Ton counts Tovld counts and Tp = 1 second.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.2.9** *P* **49** *L* **26** # 534
Schindler, Fred Cisco Systems

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

The "Transformer and Channel" ad hoc is still working with the task force on an appropriate value for Iunb.

SuggestedRemedy

Update this value using the accepted recommendation.

Proposed Response *Response Status* **O**

Cl **33** *SC* **33.7.6.5** *P* **96** *L* **20** # 535

Schindler, Fred — Cisco Systems

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

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* **O**

Cl **33** *SC* **33.4.4** *P* **74** *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 33–21 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* **O**