

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.2.7.5 P 67 L 19 # 1  
 Bennett, Ken Sifos Technologies, In

Comment Type T Comment Status X PSE Power

There is a recommendation that POWER\_UP mode persist for the complete duration of TInrush in section 33.2.7.5 of the existing standard. Commensurately, there is a recommendation against using LEGACY POWER\_UP in section 32.2.4.4. This is because legacy power-up can end POWER\_UP mode prior to the end of PD Inrush.

The result of an early exit of POWER\_UP mode is that current is not limited to the levels in figure 33-13, and inrush current could exceed expected values for a PD, potentially damaging an existing Type 1 or Type 2 PD. Type 3 and Type 4 PSE's could deliver higher currents during PD Inrush in this scenario, increasing the probability of damage to a legacy PD.

The recommendations used in the existing standard have been applied to Type 3 and Type 4 PSE's in the draft. The suggested remedy makes it a requirement for Type 3 and Type 4 PSE's. For reference, the existing text is shown below:

However, for practical implementations, it is recommended that the POWER\_UP mode on a pair set persist for the complete duration of TInrush-2P, as the PSE may not be able to correctly ascertain the conclusion of a PD's inrush behavior.

*SuggestedRemedy*

Change the text to:

However, for practical implementations, it is recommended that POWER\_UP mode in Type 1 and Type 2 PSE's persist for the complete duration of TInrush-2P, as the PSE may not be able to correctly ascertain the conclusion of a PD's inrush behavior. Type 3 and Type 4 PSE's shall remain in POWER\_UP mode until the Tinrush\_2P period in table 33-11 is met.

Proposed Response Response Status W

This should be discussed by the group as there was a comment looking to remove this statement completely.

CI 33 SC 33.2.6.2 P 57 L 3 # 2  
 Beia, Christian STMicroelectronics

Comment Type ER Comment Status D Table 33-8

Table 33-8

The meaning of YES/NO in the table is not clear enough. It would be better to replace it with allowed/disallowed, or to add some explanation in the table first lines.

*SuggestedRemedy*

Replace the first line of Table 33-8 with:  
 PSE Allowed Permutations (Yes/No), PD Allowed Permutations (Yes/No)

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 127.

EZ

CI 33 SC 33.2.4.6 P 41 L 51 # 3  
 Beia, Christian STMicroelectronics

Comment Type TR Comment Status D PSE State Diagram

To cover all the possible cases, and allow maximum design flexibility, the signature variable should also have a definition for a PSE which detected a PD requesting power on a single alternative.

*SuggestedRemedy*

To add two more definition of the signature variable:  
 Valid\_AltA: A Type 3 or Type 4 PSEs has detected a PD requesting power on Alternative A.  
 Valid\_AltB: A Type 3 or Type 4 PSEs has detected a PD requesting power on Alternative B.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 229.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.6 P57 L 35 # 4  
 Beia, Christian STMicroelectronics

Comment Type **TR** Comment Status **D** PSE Classification

A Type1 PSE which uses 1-event Physical Layer Classification can only read classification results from Class 0 to 4. Classes 5 to 8 are defined for multiple-event PL classification and are not relevant for Type1 PSE.  
 Moreover Type1 PSE behavior definition must not change from the existing standard.

*SuggestedRemedy*  
 Restore the original sentence:  
 Subsequent to successful detection, a Type 1 PSE may optionally classify a PD using 1-Event Physical Layer classification. Valid classification results are Classes 0, 1, 2, 3, and 4, as listed in Table 33–7.

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

OBE by comment # 197.

EZ

Cl 33 SC 33.3.7 P 88 L 20 # 5  
 Beia, Christian STMicroelectronics

Comment Type **TR** Comment Status **D** Table 33-18

Table 33-18  
 The maximum input guaranteed available power for Class 8 PDs cannot be 71.3W, since in a perfectly balanced system it would result into a  $0.5 \times 71.3W / 41.1V = 0.867A$  current per pair-set.  
 This value is larger than  $I_{con\_2P}$  min defined at PSE output in Table 33-11. The calculated value for  $P_{class}$  min and  $V_{port\_PSE\_2P}$  min is:  $I_{con\_2P}$  min =  $0.5 \times 90W / 52V = 0.865A$ .  
 So I suggest modifying  $P_{class\_PD}$  to 71.0W for Class8 which results into  $0.5 \times 71W / 41.1V = 0.864A$ .

*SuggestedRemedy*  
 Modify Table 33-18  
 Item: 4, Parameter: Input guaranteed available average power, Class8 with the following value:  
 Max: 71.0

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

Cl 33 SC 33.2.7.8 P70 L 33 # 6  
 Beia, Christian STMicroelectronics

Comment Type **TR** Comment Status **D** PSE Power

As done in the rest of the document, also for the Turn off time paragraph it is needed to refer to the pair set in place of the PI.

*SuggestedRemedy*  
 Replace "PI" with "pair set" in the whole paragraph, to read:

The specification for TOff in Table 33–11 shall apply to the discharge time from VPort\_PSE to VOff of a pair set with a test resistor of 320 kOhm attached to that pair set. In addition, it is recommended that the pair set be discharged when turned off. TOff starts when VPSE drops 1 V below the steady-state value after the pi\_powered variable is cleared(see Figure 33–9). TOff ends when  $VPSE \leq VOff_{max}$ . The PSE remains in the IDLE state as long as the average voltage across the pair set is VOff. The IDLE state is the state when the PSE is not in detection, classification, or normal powering states.

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

Cl 33 SC 33.2.7 P 64 L 7 # 7  
 Beia, Christian STMicroelectronics

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

Table 33-11  
 Item 17: the additional information: See 33.2.9.1.2 is still relevant and must be maintained.

*SuggestedRemedy*  
 Restore the Additional information: See 33.2.9.1.2 in Table 33-11 Item 17

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

OBE by comment #341

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.2.7 P 64 L 9 # 8  
 Beia, Christian STMicroelectronics

Comment Type ER Comment Status D Editorial

The additional information is not clearly stated. The details about how to measure Ihold are better described in section 33.2.9.1.2, which should be indicated for reference.

SuggestedRemedy

Replace:  
 Pclass <=class 4 power.  
 The pair with highest current.

With:  
 Applies to PD Classes 0-4  
 Measured on the pair set with the highest current  
 See 33.2.9.1

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Replace:  
 Pclass <=class 4 power.  
 The pair with highest current.

With:  
 Applies to PD Classes 0-4  
 Measured on the pair set with the highest current  
 See 33.2.9.1.2

EZ

CI 33 SC 33.2.5 P 50 L 47 # 9  
 Beia, Christian STMicroelectronics

Comment Type TR Comment Status D PSE Detection

The second paragraph text was not approved to be included into the draft, so probably was put in there accidentally.

SuggestedRemedy

Remove the sentence:  
 Specifically, Type 3 and Type 4 PSEs shall apply the detection probe to both pair sets prior to applying power to 4 pairs.

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

CI 33 SC 33.3.8 P 94 L 40 # 10  
 Beia, Christian STMicroelectronics

Comment Type TR Comment Status D PD MPS

In table 33-13a there is a column which describes the MPS options "high" and "low". The note below refers to section 33.3.8 for details but there is nothing there which gives extra information.

In Table 33-17 there is also reference to 33.3.8 but no explanation there.

SuggestedRemedy

Add the following sentence after first paragraph of 33.3.8:

Types 3 and 4 PDs which detect a long first class event in the range of TLMCF\_PD may reduce TMPS\_PD in order to draw a lower standby MPS power. In absence of a long first class event the minimum TMPS\_PD is higher, and the standby MPS power is also higher.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 33 SC 33.3.2 P 76 L 7 # 11  
 Beia, Christian STMicroelectronics

Comment Type TR Comment Status D PD Types

Type 3 and Type 4 are described in the same sentence and it is not clear what classes are relevant to each Type.

SuggestedRemedy

Replace the following sentence:  
 Type 3 and Type 4 PDs operating with a maximum power draw corresponding to Class 4 or greater implement both multiple-Event Physical Layer classification (see 33.3.5.2) and Data Link Layer classification (see 33.6) and advertise a class signature of 4, 5, 6, 7 or 8.

With:  
 Type 3 PDs operating with a maximum power draw corresponding to Class 4 or greater implement both multiple-Event Physical Layer classification (see 33.3.5.2) and Data Link Layer classification (see 33.6) and advertise a class signature of 4, 5, 6.

Type 4 PDs implement both multiple-Event Physical Layer classification (see 33.3.5.2) and Data Link Layer classification (see 33.6) and advertise a class signature of 7,8.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 250.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.3.7 P 87 L 28 # 12  
 Beia, Christian STMicroelectronics

Comment Type TR Comment Status D Table 33-18

Table 33-18  
 As defined in Table 33-16a the PD Type 4 is only defined for classes 7, 8.  
 So in Table 33-18 the input voltage definition for classes 0-3 is relevant to PD Types 1,3;  
 for class 4 it is relevant to Type 2,3; for classes 5,6 it is relevant to Type 3 only.

SuggestedRemedy

Remove PD Type 4 into PD type column, rows 1-6 of Table 33-18 Item 1 as follows:

- Parameter Input voltage per pair set, Class1 | PD Type 1,3
- Parameter Input voltage per pair set, Class2 | PD Type 1,3
- Parameter Input voltage per pair set, Class0,3 | PD Type 2,3
- Parameter Input voltage per pair set, Class4 | PD Type 1,3
- Parameter Input voltage per pair set, Class5 | PD Type 3
- Parameter Input voltage per pair set, Class6 | PD Type 3

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 33 SC 33.3.5.1 P 84 L 13 # 13  
 Beia, Christian STMicroelectronics

Comment Type TR Comment Status D PD Classification

The behavior of Type 3 PDs which operate with a max power draw corresponding to Class 0-3 should be described here.

SuggestedRemedy

Add the following sentence :  
 Type 3 PDs operating with a maximum power draw corresponding to class 0-3 respond to 1-Event and Multiple-Event classification returning Class signature 0, 1, 2, or 3 in accordance with the maximum power draw, PClass\_PD.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This is the 1-Event section...

Add the following sentence :  
 Type 3 PDs operating with a maximum power draw corresponding to class 0-3 respond to 1-Event classification by returning a Class signature 0, 1, 2, or 3 in accordance with the maximum power draw, PClass\_PD.

EZ

Cl 00 SC 0 P L # 14  
 Bustos Heredia, Jairo Würth Elektronik eiSo

Comment Type E Comment Status D Editorial

For homogeneous writing, chose either "pair-to-pair" or "pair to pair" when using such term

SuggestedRemedy

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Find and replace all "pair to pair" with "pair-to-pair"

EZ

Cl 00 SC 0 P L # 15  
 Bustos Heredia, Jairo Würth Elektronik eiSo

Comment Type E Comment Status D Editorial

For homogeneous writing, chose either "pair-set" or "pair set"

SuggestedRemedy

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Replace all occurrences of "pair-set" with "pair set"

EZ

Cl 00 SC 0 P L # 16  
 Bustos Heredia, Jairo Würth Elektronik eiSo

Comment Type E Comment Status D Editorial

For homogeneous writing chose either "Physical Layer classification" or "physical layer classification"

SuggestedRemedy

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Replace all occurrences of "physical layer classification" with "Physical Layer" classification as this was what was used in the existing standard.

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.1.4.1 P 23 L 89 # 17  
 Bustos Heredia, Jairo Würth Elektronik eiSo

Comment Type E Comment Status D Editorial

Higher power levels may require heavier gauge conductors than are found in Class C/  
 Category 3 cabling and (more uncommonly) in some lighter gauge Class D or better cable.

SuggestedRemedy

Higher power levels may require heavier gauge conductors than are found in Class C/  
 Category 3 cabling and (more uncommonly) in some lighter gauge Class D or better cable.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 167

EZ

Cl 33 SC 33.2.4.4 P 34 L 41 # 18  
 Bustos Heredia, Jairo Würth Elektronik eiSo

Comment Type E Comment Status D Editorial

do\_detection does not yields "valid" on both pair sets

SuggestedRemedy

do\_detection does not yield "valid" on both pair sets

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment #208

EZ

Cl 33 SC 33 P 1 L 1 # 19  
 Yseboodt, Lennart Philips

Comment Type E Comment Status D Editorial

Bulkcomment to make uses of minus/dash consistent when referencing to Tables,  
 Equations and Figures.

- page 24, line 51, Table 33-1a
- page 33, line 21, Table 33-2a
- page 55, line 26, Table 33-17
- page 66, line 16, Equation 33-4a
- page 66, line 45, Equation 33-4a
- page 67, line 4, Equation 33-4a
- page 67, line 6, Equation 33-4a
- page 75, line 25, Table 33-13a
- page 91, line 37, Equation 33-12a
- page 94, line 39, Table 33-19a
- page 105, line 52, Equation 33-18a
- page 106, line 34, Equation 33-19a
- page 106, line 37, Equation 33-19a
- page 107, line 44, Table 33-20a
- page 108, line 4, Table 33-20b
- page 145, line 33, Equation 33A-1
- page 145, line 41, Equation 33A-2

SuggestedRemedy

Replace minus with dash.

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33 P1 L1 # 20  
 Yseboodt, Lennart Philips

Comment Type E Comment Status D Editorial

Bulkcomment to consistently reference to ISO/IEC 11801 without year.

We have references on:

- page 19, line 53
- page 22, line 15
- page 22, line 19
- page 22, line 22
- page 23, line 10
- page 23, line 32
- page 102, line 27
- page 103, line 33
- page 104, line 45
- page 104, line 49
- page 105, line 9
- page 107, line 17
- page 137, line 45
- page 138, line 19

SuggestedRemedy

Replace reference (with year) to "ISO/IEC 11801".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Are references without years ok?

Cl 33 SC 33.1.4 P22 L10 # 21  
 Yseboodt, Lennart Philips

Comment Type E Comment Status D Editorial

Inconsistency in lineweight of table.

SuggestedRemedy

Make heavy line above Type 4 thin.

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

Cl 33 SC 33.1.4 P22 L25 # 22  
 Yseboodt, Lennart Philips

Comment Type E Comment Status D Unbalance

Reference to note 2 in Table 33-1 also applies to Type 4.

SuggestedRemedy

Add reference to note 2 to 0.960 in the Type 4 row.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment #134.

EZ

Cl 33 SC 33.1.4 P22 L47 # 23  
 Yseboodt, Lennart Philips

Comment Type E Comment Status D Editorial

... than class 4 power at PSE PI ...

SuggestedRemedy

... than class 4 power at the PSE PI ...

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

Cl 33 SC 33.1.4.2 P23 L30 # 24  
 Yseboodt, Lennart Philips

Comment Type E Comment Status D Editorial

Section header is "Channel requirement"

SuggestedRemedy

Change to "Channel requirements"

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.1.4.1 P 23 L 8 # 25  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 Misspelling 'guage', two occurrences.  
 SuggestedRemedy  
 Replace by gauge.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 167  
 EZ

Cl 33 SC 33.2.2 P 26 L 37 # 26  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 Figure 33-1 is incorrectly numbered and subsequent Figures are off-by-3  
 SuggestedRemedy  
 Rename Figure 33-1 to Figure 33-4 and all figures after this should be updated.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.2.2 P 26 L 1 # 27  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 The Figures 33-1 through 33-4b should list in the figure caption if the PSE is a 2P PSE or a 4P PSE.  
 This makes it easier to find the applicable figure.  
 SuggestedRemedy  
 Add appropriate 2P/4P indicator to the figure caption.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.2.2 P 28 L 28 # 28  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 Figure 33-2b, connection line to centertap of PSE side transformers is crooked.  
 SuggestedRemedy  
 Make straight.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.2.3 P 32 L 34 # 29  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 Columns in Table 33-2a are not in same order as the Table 33-2 above.  
 SuggestedRemedy  
 Swap column Alternative A(MDI) with Alternative A(MDI-X) in Table 33-2a.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 196  
 EZ

Cl 33 SC 33.2.4.4 P 39 L 5 # 30  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 Table 33-3, line thickness is inconsistent.  
 SuggestedRemedy  
 Make bold lines above Type 2 and Type 3 multirow thick to the end of the table.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.4.6 P 42 L 42 # 31  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status X Editorial  
 "... electrical requirements of PSE Type that corresponds to the connected PD Type."  
 SuggestedRemedy  
 "... electrical requirements of a PSE Type that corresponds to the connected PD Type."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Possible OBE by comment # 187  
 If 187 not accepted, replace with:  
 "... electrical requirements of the PSE Type that corresponds to the connected PD Type."

Cl 33 SC 33.2.4.7 P 43 L 54 # 32  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 Figure 33-6 to 8 are not numbered. There is a jump from 33-5 to 33-9.  
 SuggestedRemedy  
 Rename Figure 33-9 to Figure 33-6 and update sequence thereafter.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 All figure numbers must be updated to be sequential. Another comment pointed out that the PSE and PD drawings restarted at 33-1 when they should have started at 33-4. this will fill in part of the gap.  
 EZ

Cl 33 SC 33.2.4.7 P 45 L 8 # 33  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D PSE State Diagram  
 The overview state diagram makes it hard to locate the sub/state diagrams.  
 SuggestedRemedy  
 Produce a unique figure number for each of the sub state diagrams.  
 Refer to these figure numbers inside the overview figure.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 212.  
 EZ

Cl 33 SC 33.2.4.7 P 45 L 8 # 34  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D PSE State Diagram  
 Most of the state names have an abbreviated name. This increases complexity.  
 Especially the abbreviation for POWER\_DENIED, PD is highly confusing.  
 SuggestedRemedy  
 Pick 1 name for a state and do not abbreviate.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 33 SC 33.2.4.7 P 45 L 8 # 35  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D PSE State Diagram  
 The overview diagram should not mix container boxes for sub state machines with actual states.  
 SuggestedRemedy  
 Only show container boxes (dashed) in the overview and the details go in the sub state machines.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.



IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.2.4.7 P 46 L 1 # 36  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D PSE State Diagram  
 Missing name "SEARCHING" for this Figure.  
 SuggestedRemedy  
 Label it SEARCHING as is done on page 48.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 212.  
 EZ

CI 33 SC 33.2.4.7 P 47 L 1 # 37  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D PSE State Diagram  
 Missing name "DELIVERING POWER" for this Figure.  
 SuggestedRemedy  
 Label it DELIVERING POWER as is done on page 48.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 212.  
 EZ

CI 33 SC 33.2.4.7 P 45 L 1 # 38  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 Outer box for state diagram figures is redundant.  
 Applies to pages: 45, 46, 47, 48, 49.  
 SuggestedRemedy  
 Remove outer boxes.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

CI 33 SC 33.2.5.1 P 52 L 21 # 39  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D PSE Detection  
 "The PSE shall not be damaged by up to 5 mA backdriven current over the range of V oc as specified in Table 33-4."  
 Voc is not a range, only lists a maximum.  
 SuggestedRemedy  
 Change to:  
 "The PSE shall not be damaged by up to 5 mA backdriven current over the range of 0V to V\_oc as specified in Table 33-4."  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 This is text that we are not changing as part of the .3bt project.  
 This request can be filed as a maintenance request.

CI 33 SC 33.2.5.2 P 53 L 2 # 40  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 equation number 33-2 is wrong  
 SuggestedRemedy  
 equation number should be 33-1 and all equations after this should decrease with 1  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

CI 33 SC 33.2.6 P 55 L 26 # 41  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Autoclass  
 Incorrect reference to Table 33-17.  
 SuggestedRemedy  
 Replace Table 33-17 by Table 33-7.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 249  
 EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.2.6 P 57 L 1 # 42  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Table 33-8  
 Small inconsistencies in Table 33-8 formatting.  
 SuggestedRemedy  
 See yseboodt\_Table\_33\_8\_v100.pdf  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 EZ

CI 33 SC 33.2.6 P 57 L 35 # 43  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D PSE Classification  
 "Subsequent to successful detection, a Type 1 PSE may optionally classify a PD using 1-Event Physical Layer classification. Valid classification results are Classes from 0 to 8, ..."  
 Type 1 PSE only support and identify class 0-3.  
 SuggestedRemedy  
 Replace by: "Subsequent to successful detection, a Type 1 PSE may optionally classify a PD using 1-Event Physical Layer classification. Valid classification results are Classes from 0 to 3, ..."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 197.  
 Original text says 0-4 and this is Type 1 so we shouldn't change it. There is text to say class 4 is treated as class 0.  
 EZ

CI 33 SC 33.2.6.2 P 58 L 46 # 44  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 "... and the PSE measure lclass in the range ..."  
 SuggestedRemedy  
 "... and the PSE measures lclass in the range ..."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

CI 33 SC 33.2.6.2 P 58 L 47 # 45  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 "... after T ACS max this indicates the PD will perform Autoclass. (see 33.3.5.3)."  
 perform misspelling + Auto class  
 SuggestedRemedy  
 Change to "... after T ACS max this indicates the PD will perform Auto class. (see 33.3.5.3)."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change perform to perform.  
 All references should be changed to "Autoclass" by another comment (OBE, comment # 142).  
 EZ

CI 33 SC 33.2.6.2 P 59 L 52 # 46  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 Forget a period at the end of the sentence.  
 SuggestedRemedy  
 Put a period.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.6.3 P 61 L 34 # 47  
 Yseboodt, Lennart Philips

Comment Type E Comment Status D Editorial

Section title is "(TBD) Autoclass"

*SuggestedRemedy*

Remove TBD and add space: "Auto class"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Remove Space but do not add space.

Cl 33 SC 33.2.6.3 P 61 L 34 # 48  
 Yseboodt, Lennart Philips

Comment Type E Comment Status D Editorial

Bulk comment to replace "Autoclass" with "Auto class" in this section.

*SuggestedRemedy*

Change 8 occurrences.

Proposed Response Response Status W

PROPOSED REJECT.

OBE by comment # 142

Replace all "Auto class" occurrences with "Autoclass"

EZ

Cl 33 SC 33.2.6.3 P 61 L 44 # 49  
 Yseboodt, Lennart Philips

Comment Type E Comment Status D Editorial

No reference in text to Table 33-10a

*SuggestedRemedy*

Insert reference to Table 33-10a at line 41:

"PSEs implementing Autoclass shall measure the power consumption of the connected PD throughout the period bounded by T AUTO\_PSE1 and T AUTO\_PSE2, defined in Table 33-10a, measured from the transition of the POWER\_UP or SET\_PARAMETERS state to POWER\_ON state."

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.7 P 64 L 11 # 50  
 Yseboodt, Lennart Philips

Comment Type E Comment Status D Editorial

Inconsistent plural PDs.

SuggestedRemedy

Change item 17:

"DC MPS current when measured over a pair set connected to single signature

PD^3"

to

"DC MPS current when measured over a pair set connected to a single signature

PD^3"

Change item 17a:

"DC MPS current when measured over a pair set connected to dual signature

PD^3"

to

"DC MPS current when measured over a pair set connected to a dual signature

PD^3"

Change item 17b:

"DC MPS current when total sum of both pairs with the same polarity is measured, connected to single signature PDs^4"

to

"DC MPS current when the total sum of both pairs with the same polarity is measure, when connected to a single singature PD^4"

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

Cl 33 SC 33.2.7.4a P 66 L 32 # 51  
 Yseboodt, Lennart Philips

Comment Type E Comment Status D Editorial

"Pair to Pair" should be small letters

SuggestedRemedy

"pair to pair"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Replace with "pair-to-pair"

EZ

Cl 33 SC 33.2.7.4 P 66 L 19 # 52  
 Yseboodt, Lennart Philips

Comment Type E Comment Status D Editorial

Formatting error in the formula 33-4a

SuggestedRemedy

- Make "for Type 3" and "for Type 4" non-italic and match spacing with the next formula.

- Remove straight brackets [] from formula.

- A bit weird: there is an invisible 'A' as dimension for the K formula, but only the tip of the A is visible.

Remove this triangle/A.

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

Cl 33 SC 33.2.7.4 P 66 L 49 # 53  
 Yseboodt, Lennart Philips

Comment Type E Comment Status D Editorial

Equation number 33-4a is duplicate with the equation on line 19 of the same page.

SuggestedRemedy

Change number.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change second equation 33-4a (line 49) to equation 33-4b.

Change reference to equation 33-4a on pg 67 line 4 to equation 33-4b.

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.7.4a P 66 L 49 # 54  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 The formula says R Pair\_max (ohm) <= ...  
 The ohm should not be there.  
 The dimension is missing after the closing accolade bracket.  
 SuggestedRemedy  
 - Remove ohm from R Pair\_max  
 - Add ohm as dimension right of the formula  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.2.7.4a P 66 L 53 # 55  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 "Pair\_max" should not be italic  
 SuggestedRemedy  
 "Pair\_max" with upright characters  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.2.7.4a P 67 L 1 # 56  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 "Pair\_min" should not be italic  
 SuggestedRemedy  
 "Pair\_min" with upright characters  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.2.7.5 P 67 L 23 # 57  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 No reference in text to equation 33-5  
 SuggestedRemedy  
 Replace:  
 "The PSE shall limit the maximum current sourced per pair set during  
 POWER\_UP. The maximum  
 inrush current sourced by the PSE per pair set shall not exceed the per pair set inrush  
 template in Figure  
 33-13."  
 By:  
 "The PSE shall limit the maximum current sourced per pair set during  
 POWER\_UP. The maximum  
 inrush current sourced by the PSE per pair set shall not exceed the per pair set inrush  
 template in Figure  
 33-13 and Equation 33-5."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.2.7.5 P 67 L 35 # 58  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 "A Type 2 PSE that uses 1-Event physical layer classification, and requires the 1  
 ms settling time, shall power up a class 4 PD as if it used 2-Event physical layer  
 classification."  
 SuggestedRemedy  
 Replace 2-Event by Multiple-Event.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.7.7 P 68 L 48 # 59  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 "... remove power from any pair set that exceeds the "PSE upperbound template" from any missing space.  
 SuggestedRemedy  
 "... remove power from any pair set that exceeds the "PSE upperbound template" from any missing space.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 148  
 EZ

Cl 33 SC 33.2.7.7 P 69 L 27 # 60  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 In Figure 33-14 the parameters TLIMmin, TCUTmin and TCUTmax are missing the -2P suffix.  
 SuggestedRemedy  
 TLIMmin-2P, TCUTmin-2P and TCUTmax-2P.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 144.  
 EZ

Cl 33 SC 33.2.9.1 P 72 L 1 # 61  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 There is an enlarged space between section number and title.  
 Line 1 and 7.  
 SuggestedRemedy  
 Consistent spacing.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.3.2 P 75 L 42 # 62  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 In Table 33-13a, the two bottom rows refer to note 3 which does not exist.  
 SuggestedRemedy  
 Change ^3 to ^2.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 156  
 EZ

Cl 33 SC 33.3.2 P 76 L 2 # 63  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 "Type 2 PDs implement both Multiple-Event Physical Layer classification (see 33.3.5.2) and Data Link Layer classification (see 33.6) and advertise a 2-Event class signature of 4 during all class events."  
 2-Event not correct.  
 SuggestedRemedy  
 "Type 2 PDs implement both Multiple-Event Physical Layer classification (see 33.3.5.2) and Data Link Layer classification (see 33.6) and advertise a Multiple-Event class signature of 4 during all class events."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.3.2 P 76 L 8 # 64  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 "multiple-Event" capitalization  
 SuggestedRemedy  
 "Multiple-Event"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

CI 33 SC 33.3.3.4 P 78 L 46 # 65  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D PD State Diagram  
 "A timer used to prevent the Type 2 PD from drawing more than inrush current during the PSE's inrush period; see T delay in Table 33-18."  
 SuggestedRemedy  
 Change to "T Delay" to "Tdelay-2P"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 112.

CI 33 SC 33.3.3.4a P 79 L 12 # 66  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 No space between "Type 3, 4MPS"  
 SuggestedRemedy  
 "Type 3, 4 MPS"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

CI 33 SC 33.3.4 P 82 L 9 # 67  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 No reference in text to equation 33-8.  
 SuggestedRemedy  
 Change  
 "The detection signature is a resistance calculated from two voltage/current measurements made during the detection process."  
 To:  
 "The detection signature is a resistance calculated from two voltage/current measurements made during the detection process, as defined in Equation 33-8."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

CI 33 SC 33.3.5 P 83 L 43 # 68  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 "A Type 1 PD may implement any of the class signatures in 33.3.5 and 33.6."  
 Bad section reference.  
 SuggestedRemedy  
 "A Type 1 PD may implement any of the class signatures in 33.3.5.1 and 33.6."  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 We are not changing Type 1 behavior.  
 This could be filed as a maintenance request.  
 EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.3.5.2 P 84 L 47 # 69  
 Yseboodt, Lennart Philips

Comment Type E Comment Status D Editorial

No reference in text to Table 33-16a

SuggestedRemedy

Change:  
 "PDs implementing Multiple-Event physical layer classification shall present class\_sig\_A during DO\_CLASS\_EV1 and DO\_CLASS\_EV2 and class\_sig\_B during DO\_CLASS\_EV3, DO\_CLASS\_EV4, DO\_CLASS\_EV5 and DO\_CLASS\_EV6, as defined in Table 33-16a."

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

Cl 33 SC 33.3.5.2 P 85 L 26 # 70  
 Yseboodt, Lennart Philips

Comment Type E Comment Status D Editorial

"Type 3 and Type 4 PD shall conform to the electrical requirements..."  
 PD, multiple.

SuggestedRemedy

"Type 3 and Type 4 PDs shall conform to the electrical requirements..."

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

Cl 33 SC 33.3.5.3 P 86 L 31 # 71  
 Yseboodt, Lennart Philips

Comment Type E Comment Status D Editorial

No reference in text to Table 33-17a

SuggestedRemedy

Insert a new paragraph at the end of 33.3.5.3  
 "PDs implementing Auto class shall conform to the timing requirements as defined by Table 33-17a."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Add reference to table 33-17a after Tacs on line 23 and after Tauto\_pd2 on line 30.

EZ

Cl 33 SC 33.3.5.3 P 86 L 33 # 72  
 Yseboodt, Lennart Philips

Comment Type E Comment Status D Editorial

Table 33-17a lists only timing parameters, but is titled "Auto class Electrical Requirements".

SuggestedRemedy

Rename to Auto class PD timing requirements

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

Cl 33 SC 33.3.7 P 88 L 1 # 73  
 Yseboodt, Lennart Philips

Comment Type E Comment Status D Table 33-18

In Table 33-18, Items 4, 8, 9, 11 the Additional information field only covers part of the rows.

SuggestedRemedy

Make field fit with all rows of the corresponding item.

Proposed Response Response Status W

PROPOSED ACCEPT.

Partial OBE by comment # 152.

EZ



IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.3.7 P 88 L 47 # 74  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 Table 33-18, Item 8 for Type 3/4 empty.  
 SuggestedRemedy  
 Insert TBD.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.3.7 P 88 L 50 # 75  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status X Pres: Table 33-18  
 Table 33-18, Item 9 for Type 3/4 empty.  
 SuggestedRemedy  
 Insert TBD.  
 Proposed Response Response Status W  
 Waiting for Presentation from Yair.

Cl 33 SC 33.3.7.4 P 91 L 25 # 76  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D PD Power  
 No reference in text to equation 33-11.  
 This is, for example, inconsistent with the paragraph above which does have a  
 reference to Eq. 33-10.  
 SuggestedRemedy  
 Change  
 "The maximum I Port value for all operating V Port\_PD range shall be defined by  
 the following equation:"  
 To  
 "The maximum I Port value for all operating V Port\_PD range shall be defined by  
 Equation 33-11"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Merge with result of comment # 117.  
 EZ

Cl 33 SC 33.3.8 P 94 L 44 # 77  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 "PDs using auto class" missing capital.  
 SuggestedRemedy  
 "PDs using Auto class"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 142  
 Replace with "Autoclass"  
 EZ

Cl 33 SC 33.3.8 P 94 L 49 # 78  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 Annex for MPS is still TBD.  
 SuggestedRemedy  
 Add editors note that we still need to write this annex.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Add below ine 49:  
 "Editor's Note to be removed before publication: Informative Annex on MPS behavior and  
 design guidelines to be added."  
 EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.4.1 P 95 L 24 # 79  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 Line 24 says "Insert Table 33-19a as follows:", but the Table is moved beyond the section boundary.  
 SuggestedRemedy  
 Insert table in section 33.3.8.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 301.  
 EZ

Cl 33 SC 33.4.3 P 98 L 18 # 80  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 "is the frequency in MHz from 1.00 MHz to 100. MHz for a 100 Mb/s or greater PHY"  
 Missing zero after 100. MHz  
 SuggestedRemedy  
 Change to  
 "is the frequency in MHz from 1.00 MHz to 100.0 MHz for a 100 Mb/s or greater PHY"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.4.6 P 101 L 46 # 81  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 Confusing use of Ed\_out (multiple definition) between 10G and lower speeds & no reference to Eq. 33-17a.  
 SuggestedRemedy  
 Change  
 "For 10GBASE-T, the coupled noise, E d\_out in Figure 33-22, from a PSE or PD to the differential transmit and receive pairs shall not exceed the following requirements under the conditions specified in 33.4.4, item 1) and item 2)."  
 To  
 "For 10GBASE-T, the coupled noise, E d\_out in Figure 33-22, from a PSE or PD to the differential transmit and receive pairs shall not exceed the requirements in Equation 33-17a under the conditions specified in 33.4.4, item 1) and item 2)."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.4.6 P 101 L 46 # 82  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 Equation 33-17a uses variable name Edout.  
 SuggestedRemedy  
 Change to "Ed\_out" to match text and Figure 33-22.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.4.6 P 101 L 46 # 83  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 Missing description of what 'f' is (inconsistent with other formulas, eg. 33-15).  
 SuggestedRemedy  
 Add description such as with Eq 33-15.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.4.9.1.1 P 106 L 4 # 84  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 Dimension of frequency is in equation " $1 \leq f \leq 250$  MHz" (twice)  
 SuggestedRemedy  
 remove "MHz" in equation consistent with Eq 33-18.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.5.1.1.1a P 110 L 43 # 85  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 Poweer is spelled wrong  
 SuggestedRemedy  
 Change to "power"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 154.  
 EZ

Cl 33 SC 33.5.1.1.4 P 111 L 23 # 86  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 "Bits 11.3:2 report the supported PSE Pinout Alternative specified in 33.2.1."  
 Pinout is not specified there.  
 SuggestedRemedy  
 change to "Bits 11.3:2 report the supported PSE Pinout Alternative specified in 33.2.3."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.5.1.2.12 P 114 L 31 # 87  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 "When read as a one, bit 12.0 indicates that the PSE supports the option to control which PSE Pinout Alternative (see 33.2.1)"  
 Pinout is not specified there.  
 SuggestedRemedy  
 change to  
 "When read as a one, bit 12.0 indicates that the PSE supports the option to control which PSE Pinout Alternative (see 33.2.3)"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.6.3.4 P 119 L 41 # 88  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 "Value^a" has wrong footnote reference, 3 times in this table 33-23  
 SuggestedRemedy  
 change to "Value^1"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33A.3 P 145 L 37 a # 89  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 Small case letter a used in 33a-2 and 33a-3  
 SuggestedRemedy  
 33A-2 and 33A-3  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33A.3 P 145 L 37 # 90  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 Rch\\_max and Rch\\_min uses a backslash on line 37 and 45.  
 SuggestedRemedy  
 Change to Rch\\_max and Rch\\_min  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33A.3 P 145 L 33 # 91  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 "Channel pair to pair resistance unbalance is defined by Equation (33a-1):"  
 Equation (33a-1) reference is wrong  
 SuggestedRemedy  
 Change to Equation (33A-2)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33A.3 P 145 L 41 # 92  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 "Channel pair to pair resistance difference is defined by Equation (33a-2):"  
 Equation (33a-2) reference is wrong  
 SuggestedRemedy  
 equation (33A-3)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 79 SC 79.3.2 P 151 L 28 # 93  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Autoclass  
 Reminder needed to add Auto class capability  
 SuggestedRemedy  
 Add editors note: Auto class capability in LLDP to be added.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 79.3.2.5 P 154 L 13 # 94  
 Yseboodt, Lennart Philips  
 Comment Type E Comment Status D Editorial  
 No space after "Power" on line 13 and 37  
 SuggestedRemedy  
 add space after "Power" on line 13 and 37  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

**Cl 33**    **SC 33A**                    **P 145**    **L 1**            # **95**  
 Yseboodt, Lennart                    Philips  
**Comment Type**    **ER**            **Comment Status**    **D**                    *Editorial*  
 Change bars are missing for changes in the text.  
 They only are present for editors notes.  
*SuggestedRemedy*  
 Add change bars to Annex 33A for all changes since 802.3-2012.  
**Proposed Response**            **Response Status**    **W**  
 PROPOSED ACCEPT.  
 EZ

**Cl 79**    **SC 79**                    **P 148**    **L 1**            # **96**  
 Yseboodt, Lennart                    Philips  
**Comment Type**    **ER**            **Comment Status**    **D**                    *Editorial*  
 Change bars are missing for changes in the text.  
 They only are present for editors notes.  
*SuggestedRemedy*  
 Add change bars to clause 79 for all changes since 802.3-2012.  
**Proposed Response**            **Response Status**    **W**  
 PROPOSED ACCEPT.  
 EZ

**Cl 33**    **SC 33.2.0a**                    **P 24**            **L 33**            # **97**  
 Yseboodt, Lennart                    Philips  
**Comment Type**    **T**            **Comment Status**    **D**                    *PSE Types*  
 Table 33-1a, incorrect implementation of comment D0.4/#38  
*SuggestedRemedy*  
 See yseboodt\_table\_33\_1a\_v100.pdf  
**Proposed Response**            **Response Status**    **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comments # 277 and # 278.  
 EZ

**Cl 33**    **SC 33.2.4.4**                    **P 36**            **L 7**            # **98**  
 Yseboodt, Lennart                    Philips  
**Comment Type**    **T**            **Comment Status**    **D**  
 IPort = Output current (see 33.2.7.6)  
 Other parts of the text refer to lport\_2P, including the referenced 33.2.7.6  
*SuggestedRemedy*  
 Rename lport to lport\_2P and put a note to also change the name in the state machine.  
**Proposed Response**            **Response Status**    **W**  
 PROPOSED ACCEPT.  
 EZ

**Cl 33**    **SC 33.2.4.4**                    **P 39**            **L 5**            # **99**  
 Yseboodt, Lennart                    Philips  
**Comment Type**    **T**            **Comment Status**    **X**                    *PSE Types*  
 A Type 4 PSE is distinct from a Type 3 PSE in ways other than power (Vpse min, polarity, must implement 4P).  
 We do not want to prevent Type 4 PSEs from providing also power below class 7.  
 Currently Table 33-3 requires a Type 4 PSE to have class\_num\_events = 5, possibly restricting it to Class 7 and 8.  
*SuggestedRemedy*  
 Add class\_num\_events 1, 2 and 4 also for Type 4.  
**Proposed Response**            **Response Status**    **W**  
 This goes to the heart of what a Type 4 PSE is. I would like to hear the group's opinion on this.  
 See Comment # 287.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.6 P 56 L 4 # 100  
 Yseboodt, Lennart Philips

Comment Type T Comment Status D PSE Classification

Table 33-7, 3rd column title is "Minimum power levels at the output of the PSE (Pclass)".  
 Note 2 says "This is the minimum power at the PSE PI."

The output level at the PSE PI can be anything between MPS and Pclass.  
 Pedantic reading would seem to imply that PSE must source Pclass at all times.

*SuggestedRemedy*

Replace by "Minimum supported power level at the output of the PSE (Pclass)"  
 and the note by "This is the minimum supported power at the PSE PI".

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 33 SC 33.2.6 P 56 L 4 # 101  
 Yseboodt, Lennart Philips

Comment Type T Comment Status D PSE Classification

The construct "xx W or Ptype as defined in Table 33-11 whichever is less" is used.  
 Unless a PSE is providing more class events than its Type would allow, Ptype is always  
 larger or equal than any class power valid for its Type.  
 The part "or Ptype as defined in Table 33-11 whichever is less" has no effect.

*SuggestedRemedy*

Remove "or Ptype as defined in Table 33-11 whichever is less" from each row that has it.

Proposed Response Response Status W

PROPOSED REJECT.

I do not believe this is correct. A Type 3 PSE that tries to power a class 8 PD, will have a  
 Ptype of 60W but will see "90W" as the request from the PD. Thus the minimum  
 supported power from the PSE would have to be 60W rather than 90W. In terms of the  
 language in the draft: Ptype (60W) or 90W whichever is less.

Ptype is defined in Table 33-11 per type (class fingers have no influence on Ptype).

Cl 33 SC 33.2.6 P 57 L 27 # 102  
 Yseboodt, Lennart Philips

Comment Type T Comment Status D Table 33-8

In Table 33-8. Type 3, 4 PDs, intersection of 'Multiple-event' and 'No DLL'.  
 Class 3 or below PDs are not required to support DLL.

*SuggestedRemedy*

Add a Table footnote '2' there that says:  
 "2 A Type 3 or 4 PD that is limited to Class 0-3 power levels may omit DLL support".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Add a Table footnote '2' there that says:  
 "Any PD that is limited to Class 0-3 power levels may omit DLL support".

Cl 33 SC 33.2.6 P 57 L 31 # 103  
 Yseboodt, Lennart Philips

Comment Type T Comment Status D

The note says "A Type 3 PSE that is limited to class 3 power levels can be limited to 1-  
 event physical layer classification."  
 This is actually true for class 0-3.

*SuggestedRemedy*

Replace note by:  
 "A Type 3 PSE that is limited to Class 0-3 power levels can be limited to 1-event physical  
 layer classification."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 260

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.6 P57 L 9 # 104  
 Yseboodt, Lennart Philips

Comment Type T Comment Status D Table 33-8

There is an inadvertent content change in Table 33-8 compared to the old table format.  
 Two rows for Type 1 PDs have been swapped.

SuggestedRemedy

- Change Type 1, PD, Multiple-event, No-DLL from NO to YES
- Change Type 1, PD, Multiple-event, DLL from NO to YES
- Change Type 1, PD, None, No-DLL from YES to NO
- Change Type 1, PD, None, DLL from YES to NO

See yseboodt\_Table\_33\_8\_v100.pdf

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Make edits as suggested, but change yes and no to valid and invalid respectively.

Cl 33 SC 33.2.6.2 P59 L 52 # 105  
 Yseboodt, Lennart Philips

Comment Type T Comment Status D PSE Classification

A Type 4 PSE shall skip MARK\_EV\_4 and CLASS\_EV5 and transition directly to Mark\_EV\_LAST if the class signature detected during CLASS\_EV4 is 1 or 2

This was not updated after the 75W class was added.

SuggestedRemedy

A Type 4 PSE shall skip MARK\_EV\_4 and CLASS\_EV5 and transition directly to Mark\_EV\_LAST if the class signature detected during CLASS\_EV4 is 0 or 1.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 292

EZ

Cl 33 SC 33.2.7 P62 L 1 # 106  
 Yseboodt, Lennart Philips

Comment Type T Comment Status D PSE Power

We currently do not have a specification for the maximum delay between bringing the pair sets power up.

A PD cannot easily measure if it is getting 2P or 4P power.

If the pair sets are not brought up together, a PD could draw double the inrush, or exceed the 2P power limit (even if it waited for Tdelay\_2P).

SuggestedRemedy

Introduce a new parameter T<sub>pu</sub> (T Pair set Power up delay) with a maximum value of 50ms.

A PSE that decides to 4P power a SS PD will need to transition both pair sets into inrush within T<sub>pu</sub>.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Add new row "1b" to Table 33-11.

Parameter: Power up delay between pair sets

Symbol: T<sub>pu</sub>

Unit: s

Min: Blank

Max: TBD

PSE Type: 3, 4

Additional Information: See 33.2.7.5

Add:

"Editor's Note to be removed before publication: Timing requirements for 4-pair power to be added to this section."

to beginning of section 33.2.7.5

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.7 P 63 L 30 # 107  
 Yseboodt, Lennart Philips

Comment Type T Comment Status D PSE Power

Table 33-11, Item 12 defined Ptype.  
 It is double defined for Type 3, once for 2P mode and once for 4P mode.  
 This makes the value of Ptype ambiguous and is not needed.

*SuggestedRemedy*

Remove the 2P variant for Type 3 PType and also the corresponding note.

Proposed Response Response Status W

Cl 33 SC 33.2.7.2 P 65 L 30 # 108  
 Yseboodt, Lennart Philips

Comment Type T Comment Status X PSE Power

"The minimum PD input capacitance allows the PD to operate for any input voltage transient lasting less than 30 us. Transients lasting more than 250 us shall meet the V Port\_PSE-2P specification."

This statement is not true for the higher power classes.

*SuggestedRemedy*

Option 1 (preferred):  
 Lower the minimum time (30us) to:  
 Type 3: 15us  
 Type 4: 10us

Option 2:  
 Increase the minimum capacitance of PDs to:  
 Type 3: 10uF  
 Type 4: 15uF  
 (double that for DS PDs)

Proposed Response Response Status W

This should be discussed by the group as there are two options listed in the suggested remedy.

Cl 33 SC 33.2.7.4 P 66 L 19 # 109  
 Yseboodt, Lennart Philips

Comment Type T Comment Status D PSE Power

The K factor calculation uses Rchan. Therefore the result of K is not dimensionless, but Ohm-ish.

*SuggestedRemedy*

The formula should be reworked to use a calculation based on Rchan/Rch to be properly dimensionless.

Add editors note to mark this as todo.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Add Editor's note below equation 33-4a:

"Editor's Note to be removed before publication: Formula should be reworked so that in is unitless. Currently the formula results in a unit related to Ohms."

EZ



IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.2.7.7 P 68 L 43 # 110  
 Yseboodt, Lennart Philips

Comment Type T Comment Status D PSE Power

D0.4 and 802.3-2012 text said that power shall be removed before crossing the upperbound template.  
 D1.0 text says this:  
 "When connected to a single signature PD, a Type 3 or Type 4 PSE may remove power from both pair sets if the current draw exceeds the "PSE lowerbound template" on either pair set, and shall remove power from both pair sets if the current draw exceeds the "PSE upper bound template" on either pair set.

When connected to a dual signature PD, a Type 3 or Type 4 PSE may remove power from any pair set that exceeds the "PSE lowerbound template" and shall remove power from any pair set that exceeds the "PSE upperbound template".  
 Power may be removed from both pair sets any time power is removed from one pair set."

*SuggestedRemedy*

- Note: remedy does 3 things:  
 - insert space between "fromany"  
 - add references to Fig 33-14 and Eq 33-7  
 - change "exceeds" to "equals or exceeds"

"When connected to a single signature PD, a Type 3 or Type 4 PSE may remove power from both pair sets if the current draw exceeds the "PSE lowerbound template" defined in Equation 33-7 and Figure 33-14, on either pair set, and shall remove power from both pair sets if the current draw equals or exceeds the "PSE upper bound template" on either pair set.

When connected to a dual signature PD, a Type 3 or Type 4 PSE may remove power from any pair set that exceeds the "PSE lowerbound template" and shall remove power from any pair set that equals or exceeds the "PSE upperbound template".  
 Power may be removed from both pair sets any time power is removed from one pair set."

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Possible OBE by comment # 238.

"When connected to a single signature PD, a Type 3 or Type 4 PSE may remove power from both pair sets if the current draw meets or exceeds the "PSE lowerbound template" defined in Equation 33-7 and Figure 33-14, on either pair set, and shall remove power from both pair sets before the current draw equals or exceeds the "PSE upper bound template" on either pair

set.

When connected to a dual signature PD, a Type 3 or Type 4 PSE may remove power from any pair set that meets or exceeds the "PSE lowerbound template" and shall remove power from a pair set before the current draw equals or exceeds the "PSE upperbound template" on that pair set.  
 Power may be removed from both pair sets any time power is removed from one pair set."

CI 33 SC 33.3.1 P 74 L 41 # 111  
 Yseboodt, Lennart Philips

Comment Type T Comment Status D Editorial

Comment D0.4/#105 partially implemented.  
 "Type 3 and Type 4 PDs shall be capable of accepting power on either or both of the pair sets."

*SuggestedRemedy*

"Type 3 and Type 4 PDs shall be capable of accepting power on either pair-set and shall be capable of accepting power on both pair-sets."

Proposed Response Response Status W  
 PROPOSED ACCEPT.

EZ

CI 33 SC 33.3.3.4 P 78 L 46 # 112  
 Yseboodt, Lennart Philips

Comment Type T Comment Status D PD State Diagram

"A timer used to prevent the Type 2 PD from drawing more than inrush current during the PSE's inrush period; see T delay in Table 33-18."

This also applies to Type 3 and 4.

*SuggestedRemedy*

"A timer used to prevent a Type 2, 3 or 4 PD from drawing more than inrush current during the PSE's inrush period; see T delay-2P in Table 33-18."

This OBEs the editorial comment to change T delay to T delay-2P

Proposed Response Response Status W  
 PROPOSED ACCEPT.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.3.5.3 P 86 L 35 # 113  
 Yseboodt, Lennart Philips  
 Comment Type T Comment Status D Editorial  
 Units for Item 2 (T\_Auto\_PD1) and Item 3 (T\_Auto\_PD2) are in millisec and should be in seconds.  
 SuggestedRemedy  
 Change "ms" to "s" for Item 2 and 3 in Table 33-17a  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.3.7 P 88 L 48 # 114  
 Yseboodt, Lennart Philips  
 Comment Type T Comment Status X Pres: Table 33-18  
 The Cport(min) for Type 1 and 2 was 5uF. This number should apply both in 2P mode as well as in 4P mode for Type 1 and 2. By changing Cport to Cport\_2P, a Type 2 PD with 5uF would no longer be compliant when powered over 4P.  
 SuggestedRemedy  
 Since PDs cannot change their capacitance whether they are 4P or 2P powered and we cannot change Type 1, 2 I would suggest this:  
 Type 1,2 in 2P mode => 5uF(min) at the PI (total)  
 Type 1,2 in 4P mode => 5uF(min) at the PI (total)  
 Type 3,4 in 2P mode => 5uF(min) at the PI (total)  
 Type 3,4 in 4P mode, Single Sig => 5uF(min) at the PI (total)  
 Type 3,4 in 4P mode, Dial Sig => 5uF(min) on each pair set  
 Change the name Cport\_2P back to Cport.  
 Proposed Response Response Status W  
 Waiting for Presentation from Yair.

Cl 33 SC 33.3.7 P 89 L 15 # 115  
 Yseboodt, Lennart Philips  
 Comment Type T Comment Status D Table 33-18  
 Von and Voff are TBD for Type 3 and 4.  
 SuggestedRemedy  
 There is no reason to pick new numbers for the new Types.  
 Use Von = 42V for Type 1-4.  
 Use Voff = 30V for Type 1-4.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.3.7.4 P91 L 5 # 116  
 Yseboodt, Lennart Philips

Comment Type T Comment Status D PD Power

"At any static voltage at the PI, and any PD operating condition, the peak power shall not exceed  
 P Class\_PD max for more than T CUT min, as defined in Table 33-11 and 5% duty cycle.  
 Peak operating power shall not exceed P Peak max."

"Ripple current content (I Port\_ac ) superimposed on the DC current level (I Port\_dc ) is allowed if the total input power is less than or equal to P Class\_PD max."

This disallows extended power. This is the text description of Figure 33-18.

*SuggestedRemedy*

"At any static voltage at the PI, and any PD operating condition, with the exception of class 6 or class 8 PDs, the peak power shall not exceed  
 P Class\_PD max for more than T CUT min, as defined in Table 33-11 and 5% duty cycle.  
 Peak operating power shall not exceed P Peak max."

"At any static voltage at the PI, class 6 or class 8 PDs in operating condition, the peak power shall not exceed  
 PClass at the PSE PI for more than T CUT min, as defined in Table 33-11 and 5% duty cycle. Peak operating power shall not exceed Ipeak \* Vpse at the PSE PI."

"Ripple current content (I Port\_ac ) superimposed on the DC current level (I Port\_dc ) is allowed if the total input power is less than or equal to P Class\_PD max, or Pclass at the PSE PI for class 6 and class 8 PDs."

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 33 SC 33.3.7.4 P91 L 22 # 117  
 Yseboodt, Lennart Philips

Comment Type T Comment Status D PD Power

"The maximum I Port value for all operating V Port\_PD range shall be defined by the following equation:  
 $I_{portmax} = P_{class\_PD} / V_{port\_PD} (A) (33-11)"$

This disallows extended power by limiting the current.

*SuggestedRemedy*

"The maximum I Port value for all PDs except those in Class 6 or Class 8, over the operating V Port\_PD range, shall be defined by the following equation:  
 $I_{portmax} = P_{class\_PD} / V_{port\_PD-2P} (A) (33-11)"$

"The maximum I Port value for all PDs in Class 6 or Class 8, over the operating V Port\_PD range, shall be defined by the following equation:  
 $I_{portmax} = P_{class\_PD} / V_{port\_PD-2P(min)} (A) (33-11a)"$

where  
 $I_{portmax}$  is the maximum DC and RMS input current  
 $V_{port\_PD-2P(min)}$  is the minimum static input voltage at PD PI  
 $P_{class\_PD}$  is the maximum power, P Class\_PD max, as defined in Table 33-18"

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 33 SC 33.4.1.1.2 P95 L 45 # 118  
 Yseboodt, Lennart Philips

Comment Type T Comment Status D Editorial

Bulk comment to change reference to IEC 60950-1:2001 which is outdated and superseded by IEC 62368-1.  
 In the following places:  
 - page 95, line 45  
 - page 95, line 49  
 - page 95, line 50  
 - page 95, line 53  
 - page 96, line 34  
 - page 97, line 22

*SuggestedRemedy*

Reference to IEC 60950-1 (without date) and to IEC 62368-1 which is the successor of IEC 60950-1.

Proposed Response Response Status W  
 PROPOSED ACCEPT.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.4.9.1.3 P 107 L 10 # 119  
 Yseboodt, Lennart Philips  
 Comment Type T Comment Status D AES  
 Last row frequency for 10GBASE-T is not including 500 MHz, seems inconsistent.  
 SuggestedRemedy  
 change to " f<= 500 MHz"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.4.9.1.4d P 107 L 45 # 120  
 Yseboodt, Lennart Philips  
 Comment Type T Comment Status X AES  
 "PSANEXT loss for 10GBASE-T capable Midspan PSE devices shall meet or exceed the values determined using the equations shown in Table 33-20a for all specified frequencies. Calculations that result in PSANEXT loss values greater than 67 dB shall revert to a requirement of 67 dB minimum."  
 This number of 67dB does not seem to match with Table 33-20a.  
 SuggestedRemedy  
 Make consistent whichever way is right.  
 Proposed Response Response Status W  
 I don't understand this comment. Why does 67dB not match with Table 33-20a?

Cl 33 SC 33.6.3.2 P 116 L 4 # 121  
 Yseboodt, Lennart Philips  
 Comment Type T Comment Status D DLL  
 For PD\_DLLMAX\_VALUE, class 8 is listed as 900.  
 Type 4 has a maximum power of 99.9W, but via physical layer only up to 90W can be negotiated.  
 LLDP is the best/only way to negotiate higher power than 90.  
 SuggestedRemedy  
 Change PD\_DLLMAX\_VALUE / Class 8 = 999  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 79 SC 79.3.2.6a P 155 L 4 # 122  
 Yseboodt, Lennart Philips  
 Comment Type T Comment Status D DLL  
 This section (PSE power status) only contains a table without text.  
 SuggestedRemedy  
 Insert editors note: Descriptive/normative text to be added to this section.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 79 SC 79.3.2.6b P 156 L 3 # 123  
 Yseboodt, Lennart Philips  
 Comment Type T Comment Status D DLL  
 This section (System setup) only contains a table without text.  
 SuggestedRemedy  
 Insert editors note: Descriptive/normative text to be added to this section.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.3 P 32 L 31 # 124  
 Yseboodt, Lennart Philips

Comment Type T Comment Status D Editorial

Table 33-2a introduces a new pinout configuration 'Alternative B(X)'.  
 The other polarity configuration is named 'Alternative B'.  
 Possible confusion can occur now when referring to 'Alternative B':  
 - does it mean the specific polarity configuration ?  
 - or to the pinout configuration ?

We need a distinct name for the "Alternative B" polarity configuration, so the term "Alternative B" refers to which pins are used independent from polarity.

*SuggestedRemedy*

Rename 'Alternative B' to 'Alternative B(S)' in the third column of Table 33-2a.  
 S for Straight  
 X for Cross

Other option:

Alternative B => Alternative B(N) N for Normal

Alternative B(X) => Alternative B(R) R for Reversed

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Rename 'Alternative B' to 'Alternative B(S)' in the third column of Table 33-2a.  
 S for Straight  
 X for Cross

Cl 33 SC 33.2.1 P 25 L 16 # 125  
 Yseboodt, Lennart Philips

Comment Type T Comment Status D PSE Types

"PSEs may support either Alternative A, Alternative B, or both."  
 This information is already covered on page 33, line 25-28.  
 Also this statement is not correct for Type 4.

*SuggestedRemedy*

Remove this line.

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

Cl 33 SC 33.5.1.1.4 P 111 L 16 # 126  
 Yseboodt, Lennart Philips

Comment Type T Comment Status D Management

The pair control variable is not yet 4P aware.  
 "When read as '01', bits 11.3:2 indicate that only PSE Pinout Alternative A is supported by the PSE. When read as '10', bits 11.3:2 indicate that only PSE Pinout Alternative B is supported by the PSE.

Where the option of controlling the PSE Pinout Alternative through these bits is provided, setting bits 11.3:2 to '01' shall force the PSE to use only PSE Pinout Alternative A and setting bits 11.3:2 to '10' shall force the PSE to use only PSE Pinout Alternative B.

If bit 12.0 is one, writing to these register bits shall set mr\_pse\_alternative to the corresponding value: '01' =

A and '10' = B. The combinations '00' and '11' for bits 11.3:2 are reserved and will never be assigned.

Reading bits 11.3:2 returns an unambiguous result of '01' or '10' that may be used to determine the presence of the PSE Control register."

*SuggestedRemedy*

Replace by:

"When read as '01', bits 11.3:2 indicate that only PSE Pinout Alternative A is supported by the PSE. When read as '10', bits 11.3:2 indicate that only PSE Pinout Alternative B is supported by the PSE.

When read as '11', bits 11.3:2 indicate that both Pinout Alternative A and Pinout Alternative B are supported by the PSE.

Where the option of controlling the PSE Pinout Alternative through these bits is provided, setting bits 11.3:2

to '01' shall force the PSE to use only PSE Pinout Alternative A and setting bits 11.3:2 to '10' shall force the

PSE to use only PSE Pinout Alternative B.

Setting bits 11.3:2 to '11' shall allow the PSE to use both PSE Pinout Alternative A and PSE Pinout Alternative B simultaneously.

If bit 12.0 is one, writing to these register bits shall set mr\_pse\_alternative to the corresponding value: '01' =

A, '10' = B and '11' = BOTH. The combination '00' for bits 11.3:2 is reserved and will never be assigned.

Reading bits 11.3:2 returns an unambiguous result of '01', '10' or '11' that may be used to determine the presence of the PSE Control register."

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

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

**CI 33**      **SC 33.2.6**      **P 57**      **L 1**      # **127**

Johnson, Peter      Sifos Technologies

*Comment Type* **E**      *Comment Status* **D**      *Table 33-8*

While Table 33-8 is an improvement upon the prior version of that table, there is an opportunity to make it even clearer. All of the "Yes", "No" entries in this table are answering the implied question "Is this configuration valid?".

Suggestion is to rid the table of the "implied question" as per remedy below.

*SuggestedRemedy*

Replace "Permutations" with "Configurations".

Replace "Yes" with "Valid" and "No" with "Invalid".

Re-title Table 33-8: "PSE and PD classification configurations"

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

See comment # 141.

EZ

**CI 33**      **SC 33.2.6**      **P 55**      **L 11**      # **128**

Johnson, Peter      Sifos Technologies

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

Table 33-8 uses the terms "No DLL" and "DLL". These have not been defined earlier in the document.

*SuggestedRemedy*

Add "(DLL)" after "Data Link Layer" on line 11.

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

EZ

**CI 33**      **SC 33.2.4.4**      **P 35**      **L 20**      # **129**

Johnson, Peter      Sifos Technologies

*Comment Type* **T**      *Comment Status* **D**      *4PID*

The state machine variable "maintain\_4pair\_power" can be reset as a result of 3 possible events including LLDP message (e.g. "PD does not want 4-pair power"), enforcement of class power draw (power policing to class?), and "vendor discretion".

As this is an interoperability specification, how is a PD designer to know what constitutes "vendor discretion"? For example, if a PSE can remove power from some flavor of dual signature (or dual load) PD, how does the PD designer know to design a PD where this won't happen?

Furthermore, there is no possible recipe by which to verify the integrity of the PSE's decision nor is there one to distinguish the power removal from what might otherwise be a faulty processing of an MPS or overload type of shutdown.

*SuggestedRemedy*

Either remove "vendor discretion" as a criteria or expand the Editor's Note to indicate that a more detailed criteria is required explaining why a PSE might decide that 4-pair powering is not advisable.

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

Add "Vendor discretion needs explanation." to endo of editor's note.

**CI 33**      **SC 33.2.7**      **P 62**      **L 51**      # **130**

Johnson, Peter      Sifos Technologies

*Comment Type* **T**      *Comment Status* **X**      *PSE Power*

Item 5, Inrush-2P, allows 4 pair PSE's to limit current to 450mA PER PAIR SET as currently phrased. This behavior, that is allowing up to 900mA during inrush, would damage existing PD's that were designed to expect PSE would limit inrush current to <450mA if/when those PD's receive 4-Pair power.

*SuggestedRemedy*

The remedy to this may get involved. For now, we could create an Editor's Note on the topic.

(Perhaps PSE's that limit inrush current on a per-pair set basis will need to power pair sets asynchronously by Tinrush so inrush is fully experienced on just a single pair set.)

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

This should be discussed by the group.

Should we limit the total inrush current to 450mA for class 0-4? Should we just use one pair set for inrush for class 0-4?

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 01 SC 1.4 P 18 L 14 # 131  
 Walker, Dylan Cisco  
 Comment Type E Comment Status D Editorial  
 "Pair set: Either of the two valid 4-wire connection as listed in 33.2.3."  
 Seems "connection" should be plural.  
 SuggestedRemedy  
 "Pair set: Either of the two valid 4-wire connections as listed in 33.2.3."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 175  
 EZ

Cl 00 SC 0 P L # 132  
 Walker, Dylan Cisco  
 Comment Type E Comment Status D Editorial  
 I believe the TF decided on "pairset" over "pair set" and "pair-set".  
 SuggestedRemedy  
 Replace all instances of "pair set" and "pair-set" with "pairset".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 15.  
 EZ

Cl 33 SC 33.1.4 P 21 L 53 # 133  
 Walker, Dylan Cisco  
 Comment Type E Comment Status D Editorial  
 "A power system, consists of a single PSE, a single PD, and the link segment connecting them."  
 Comma after "A power system" is not needed.  
 SuggestedRemedy  
 "A power system consists of a single PSE, a single PD, and the link segment connecting them."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 256  
 EZ

Cl 33 SC 33.1.4 P 22 L 25 # 134  
 Walker, Dylan Cisco  
 Comment Type E Comment Status D Unbalance  
 Table 33-1—System Power parameters Vs System Type  
 Note 2 is also applicable to Type 4, column 2.  
 SuggestedRemedy  
 Place Note 2 indicator next to 0.960 value for Type 4, column 2.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.1.4.1 P 23 L 10 # 135  
Walker, Dylan Cisco

Comment Type E Comment Status D

"Type 2 and Type 3 operation requires Class D, or better, cabling as specified in ISO/IEC 11801:2002 with the additional requirement that channel DC loop resistance shall be 25fΩ or less."

Make "requires" singular.

SuggestedRemedy

"Type 2 and Type 3 operation require Class D, or better, cabling as specified in ISO/IEC 11801:2002 with the additional requirement that channel DC loop resistance shall be 25Ω or less."

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

Cl 33 SC 33.1.4.2 P 23 L 30 # 136  
Walker, Dylan Cisco

Comment Type E Comment Status D Editorial

"33.1.4.2 Type 1 and Type 2 Channel requirement"

Make "requirement" plural.

SuggestedRemedy

"33.1.4.2 Type 1 and Type 2 Channel requirements"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 24

EZ

Cl 33 SC 33.1.4.3 P 23 L 49 # 137  
Walker, Dylan Cisco

Comment Type E Comment Status X Editorial

"33.1.4.3 Four-pair operation channel requirement for pair-to-pair resistance unbalance"

Since this ultimately falls under channel requirements, it seems like the subclause should be changed accordingly.

SuggestedRemedy

"33.1.4.2.1 Four-pair operation channel requirement for pair-to-pair resistance unbalance"

or

"33.1.4.2a Four-pair operation channel requirement for pair-to-pair resistance unbalance"

Whichever the style guide would dictate.

Proposed Response Response Status W

Replace with:

"33.1.4.2.1 Four-pair operation channel requirement for pair-to-pair resistance unbalance"

EZ

Cl 33 SC 33.2.3 P 32 L 31 # 138  
Walker, Dylan Cisco

Comment Type E Comment Status D Editorial

Table 33–2a—Permitted Pinout alternatives per Type

Slightly confusing that "Alternative A (MDI)" and "Alternative A (MDI-X)" columns are swapped versus Table 33-2 above it.

SuggestedRemedy

Swap "Alternative A (MDI)" and "Alternative A (MDI-X)" columns to align with Table 33-2 above it.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 196

EZ



IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 00 SC 0 P L # 139  
Walker, Dylan Cisco  
Comment Type E Comment Status D Editorial  
Inconsistency with "4-pair", "4 pair", "four pair", etc.  
SuggestedRemedy  
Suggest replacing all other variants with 4-pair.  
Proposed Response Response Status W  
PROPOSED ACCEPT.  
EZ

Cl 00 SC 0 P L # 142  
Walker, Dylan Cisco  
Comment Type E Comment Status D Editorial  
Inconsistency with the usage of "Autoclass", "Auto Class", and "Auto class".  
SuggestedRemedy  
Suggest replacing all other variants with "Autoclass".  
Proposed Response Response Status W  
PROPOSED ACCEPT.  
EZ

Cl 33 SC 33.2.4.4 P 35 L 17 # 140  
Walker, Dylan Cisco  
Comment Type E Comment Status D Editorial  
"maintain\_4pair\_power  
This variable is provided for Type 3 and Type 4 PSEs to determine whether to continue providing a 4 pair power."  
SuggestedRemedy  
"maintain\_4pair\_power  
This variable is provided for Type 3 and Type 4 PSEs to determine whether to continue providing 4 pair power."  
Proposed Response Response Status W  
PROPOSED ACCEPT.  
EZ

Cl 33 SC 33.2.7.4 P 65 L 46 # 143  
Walker, Dylan Cisco  
Comment Type E Comment Status D Editorial  
"When end to end pair to pair current unbalance is present, the ICon-2P may increase up to the value of ICon-2P-UNB as specified by Table 33-11 item 4b."  
Currently refers to item 4b, which does not exist in Table 33-11.  
SuggestedRemedy  
"When end to end pair to pair current unbalance is present, the ICon-2P may increase up to the value of ICon-2P-UNB as specified by Table 33-11 item 4a."  
Proposed Response Response Status W  
PROPOSED ACCEPT.  
EZ

Cl 33 SC 33.2.6 P 57 L 1 # 141  
Walker, Dylan Cisco  
Comment Type E Comment Status D Table 33-8  
Table 33-8—PSE and PD classification permutations  
PD permutations are in the PSE clause, but they would stand on their own in the PD clause.  
SuggestedRemedy  
(1) Rename "Table 33-8—PSE classification permutations"  
(2) Move "PD Permutations" half of the table to 33.3.5, page 83, line 43  
(3) Have the text on line 41 above it reference the new table number with title "PD classification permutations"  
Proposed Response Response Status W  
PROPOSED ACCEPT.

Cl 33 SC 33.2.7.7 P 69 L 1 # 144  
Walker, Dylan Cisco  
Comment Type E Comment Status D Editorial  
Figure 33-14—POWER\_ON state, per pair set operating current templates  
TLIMmin, TCUTmin, and TCUTmax missing "-2p" suffix on X-axis.  
SuggestedRemedy  
Rename TLIMmin, TCUTmin, and TCUTmax to TLIMmin-2P, TCUTmin-2P, and TCUTmax-2P, respectively.  
Proposed Response Response Status W  
PROPOSED ACCEPT.  
EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.7.7 P 70 L 17 # 145  
 Walker, Dylan Cisco  
 Comment Type E Comment Status D Editorial  
 "Tlimmin-2P is TLIM min per pair set as defined in Table 33-11"  
 Tlimmin-2P does not have the T italicized.  
*SuggestedRemedy*  
 Italicize the T in Tlimmin-2P.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.2.4.6 P 41 L 9 # 146  
 Walker, Dylan Cisco  
 Comment Type ER Comment Status D Editorial  
 "Invalid: Either the PSE has detected an open\_circuit on one of the pair sets, or is otherwise unable to determine wwhether the PD is single-signature or dual-signature configuration."  
 Spelling mistake.  
*SuggestedRemedy*  
 "Invalid: Either the PSE has detected an open\_circuit on one of the pair sets, or is otherwise unable to determine whether the PD is single-signature or dual-signature configuration."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 EZ

Cl 33 SC 33.2.4.6 P 42 L 42 # 147  
 Walker, Dylan Cisco  
 Comment Type ER Comment Status D PSE State Diagram  
 "The PSE may choose to apply the electrical requirements for ICon-2P, ILIM-2P, TLIM-2P, and PType (see Table 33-11) of any Type lower than or equal to the PSE Type and greater than equal to the PD Type."  
 Missing "or", assuming this paragraph isn't modified per the Editor's Note anyway.  
*SuggestedRemedy*  
 "The PSE may choose to apply the electrical requirements for ICon-2P, ILIM-2P, TLIM-2P, and PType (see Table 33-11) of any Type lower than or equal to the PSE Type and greater than or equal to the PD Type."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Possible OBE by comment # 187

Cl 33 SC 33.2.7.7 P 68 L 45 # 148  
 Walker, Dylan Cisco  
 Comment Type ER Comment Status D Editorial  
 "When connected to a dual signature PD, a Type 3 or Type 4 PSE may remove power from any pair set that exceeds the "PSE lowerbound template" and shall remove power fromany pair set that exceeds the "PSE upperbound template"."  
 Missing space.  
*SuggestedRemedy*  
 "When connected to a dual signature PD, a Type 3 or Type 4 PSE may remove power from any pair set that exceeds the "PSE lowerbound template" and shall remove power from any pair set that exceeds the "PSE upperbound template"."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.2.7 P 62 L 26 # 149  
Walker, Dylan Cisco

Comment Type T Comment Status D PSE Power

Table 33–11—PSE output PI electrical requirements for all PD classes, unless otherwise specified

Item 1a

2mV max requirement at no load was selected without considering the effect of loading on other ports within a system, which cannot be ignored without rendering this parameter pointless.

*SuggestedRemedy*

Frankly not sure yet, but would like to note that this parameter is under continued investigation with Yair to determine if the max value and/or measurement setup needs modification in order to serve its true purpose.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 368

EZ

CI 33 SC 33.2.4.4 P 34 L 39 # 150  
Walker, Dylan Cisco

Comment Type TR Comment Status D Editorial

"both\_alts\_valid

This variable is provided for Type 3 and Type 4 PSEs.

Values:False:do\_detection does not yields "valid" on both pair sets.

True: do\_detection does not yield "valid" on both pair sets."

True and False have the same definition.

*SuggestedRemedy*

"both\_alts\_valid

This variable is provided for Type 3 and Type 4 PSEs.

Values:False: do\_detection does not yield "valid" on both pairsets.

True: do\_detection does yield "valid" on both pairsets."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment #208

EZ

CI 33 SC 33.3.5.3 P 86 L 22 # 151  
Walker, Dylan Cisco

Comment Type E Comment Status D Editorial

"PDs implementing Auto class shall not have class\_sig\_A of '0'. In addition, PDs implementing Auto class shall remove its classification current at TACS, resulting in a classification signature of '0' for the remainder of CLASS\_EV1. PDs implementing Auto class carry out rest of the Physical Layer classification as defined in section 33.3.5.1 or 33.3.5.2.

After power up, PDs implementing Auto class shall consume their maximum power draw throughout the period bounded by TAUTO\_PD1 and TAUTO\_PD2, measured from when VPort\_PD rises above VPort\_PD min."

There is a missing "the" in line 24, and PD is referred to singularly and plurally in this text.

*SuggestedRemedy*

"A PD implementing Auto class shall not have class\_sig\_A of '0'. In addition, a PD implementing Auto class shall remove its classification current at TACS, resulting in a classification signature of '0' for the remainder of CLASS\_EV1. A PD implementing Auto class carries out the rest of the Physical Layer classification as defined in section 33.3.5.1 or 33.3.5.2.

After power up, a PD implementing Auto class shall consume its maximum power draw throughout the period bounded by TAUTO\_PD1 and TAUTO\_PD2, measured from when VPort\_PD rises above VPort\_PD min."

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

CI 33 SC 33.3.7 P 88 L 1 # 152  
Walker, Dylan Cisco

Comment Type E Comment Status D Table 33-18

Table 33–18—PD power supply limits (continued)

For item 4, the boxes for additional information for classes 5-8 are empty.

*SuggestedRemedy*

Make the box with additional information for classes 0-4 span all of item 4, in particular to make it more clear that there is an explanation for "Input guaranteed available average power" for classes 6 and 8 in 33.3.7.2.

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.4 P 95 L 37 # 153  
Walker, Dylan Cisco

Comment Type E Comment Status D AES

"The requirements of 33.4 are consistent with the requirements of the 10BASE-T MAU and the 100BASE-TX and 1000BASE-T and 10GBASE-T PHYs."

Extra "and" instead of comma.

SuggestedRemedy

"The requirements of 33.4 are consistent with the requirements of the 10BASE-T MAU and the 100BASE-TX, 1000BASE-T and 10GBASE-T PHYs."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

I prefer the serial comma to be included.

"The requirements of 33.4 are consistent with the requirements of the 10BASE-T MAU and the 100BASE-TX, 1000BASE-T, and 10GBASE-T PHYs."

CI 33 SC 33.5.1.1.1a P 110 L 42 # 154  
Walker, Dylan Cisco

Comment Type E Comment Status D Editorial

"33.5.1.1.1a Deny Dual Signature PD 4 Pair power"

Spelling.

SuggestedRemedy

"33.5.1.1.1a Deny Dual Signature PD 4 Pair power"

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

CI 33A SC 33A.3 P 145 L 11 # 155  
Walker, Dylan Cisco

Comment Type E Comment Status D Editorial

"33A.3 Inter Pair Resistance Unbalance"

This section describes resistance unbalance within a twisted pair, not between twisted pairs.

SuggestedRemedy

"33A.3 Intra Pair Resistance Unbalance"

Proposed Response Response Status W

PROPOSED REJECT.

33.A.4 is for Intra Pair unbalance

EZ

CI 33 SC 33.3.2 P 75 L 29 # 156  
Walker, Dylan Cisco

Comment Type ER Comment Status D Editorial

Table 33-13a—Permissible PD Types

Type 3 and Type 4 MPS entries indicate a note 3 that doesn't exist.

SuggestedRemedy

Change the 3 to a 2 for these 2 entries in Table 33-13a—Permissible PD Types.

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.4.1 P 96 L 1 # 157  
Walker, Dylan Cisco

Comment Type ER Comment Status D Editorial

Table 33-19a—PD DC Maintain Power Signature

Table was inadvertently inserted in the wrong section.

*SuggestedRemedy*

Move Table 33-19a—PD DC Maintain Power Signature to 33.3.8, page 95, line 25 under the corresponding Editor's Note on line 23.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 301.

EZ

Cl 01 SC 1.3 P 18 L 5 # 158  
Zimmerman, George CME Consulting

Comment Type ER Comment Status D Editorial

Clause 1.3 and 1.5 are placeholders, which will be deleted if no new references or abbreviations are inserted

*SuggestedRemedy*

Either - add new references (abbreviations for 1.5)  
OR - add editor's notes (one for 1.3 and one for 1.5) as follows:  
Editor's note (to be removed prior to publication) - This clause is a placeholder for new content. If no new references (abbreviations for cl 1.5) are added prior to entering sponsor ballot, this clause will be deleted from the ballot draft.

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

Cl 99 SC P 1 L 2 # 159  
Zimmerman, George CME Consulting

Comment Type E Comment Status D Editorial

802.3bt should be an amendment on the revised standard, not on IEEE Std. 201x. Several concurrent projects are tracking the revision project (bx) and it will be necessary at WG ballot. Better to get this done now while the TF is reviewing rather than introduce new errors in WG ballot

*SuggestedRemedy*

Globally change 'amendment to 802.3-2012' (in header and text) to 'amendment of 802.3-201x', and update references and base text to track the latest draft of 802.3bx (3.1 should be appropriate for the next turn of bt)

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

Cl 99 SC P 3 L 13 # 160  
Zimmerman, George CME Consulting

Comment Type E Comment Status D Editorial

Fill in amendment name and title per PAR.

*SuggestedRemedy*

Fill in 802.3bt, title text from the PAR.

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

Cl 33 SC 33.1.4 P 22 L 24 # 161  
Zimmerman, George CME Consulting

Comment Type E Comment Status D Editorial

Table 33-1 thick line between rows for Type 3 and Type 4

*SuggestedRemedy*

Replace thick line between Type 3 and Type 4 with line 'As in Table' (thin line).

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 21

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.4.6 P 40 L 52 # 162  
 Zimmerman, George CME Consulting  
 Comment Type E Comment Status D PSE State Diagram  
 do\_connection\_check needs to reference connection check requirement.  
 SuggestedRemedy  
 Insert prior to "This function returns...":  
 "This function initiates the connection check in 33.2.5.0a."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.3.5.3 P 86 L 16 # 163  
 Zimmerman, George CME Consulting  
 Comment Type E Comment Status D Editorial  
 Auto Class nomenclature is confusing. is it "Auto Class" or "Auto class" or "Autoclass". All are used in the draft.  
 SuggestedRemedy  
 Change all references to "Auto Class" or "Auto class" to "Autoclass"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 142  
 All occurrences changed to Autoclass  
 EZ

Cl 33 SC 33.1 P 19 L 12 # 164  
 Zimmerman, George CME Consulting  
 Comment Type ER Comment Status D Editorial  
 This important guide to the reader appears out of place and easily lost.  
 SuggestedRemedy  
 Make sentence 'This clause uses terms defined in clause 1.4.' it's own paragraph, in the same place where it currently is.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.1.3 P 21 L 39 # 165  
 Zimmerman, George CME Consulting  
 Comment Type ER Comment Status D Editorial  
 Editor to track revision project and update references prior to WG ballot.  
 SuggestedRemedy  
 Implement references per 802.3bx D3.1 and track.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.1.3 P 21 L 47 # 166  
 Zimmerman, George CME Consulting  
 Comment Type ER Comment Status D Editorial  
 Editor's note is unclear what is being consulted on. It appears to be on an issue that was resolved by changes on lines 39 & 42.  
 SuggestedRemedy  
 Delete editor's note or make clear what action is pending.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Has editor consulted with staff?  
 If yes, delete editor's note. If no, leave note.  
 EZ

Cl 33 SC 33.1.4.1 P 23 L 8 # 167  
 Zimmerman, George CME Consulting  
 Comment Type ER Comment Status D Editorial  
 gauge is misspelled as guage. (2 instances)  
 SuggestedRemedy  
 change guage to gauge (2 instances)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.0a P 24 L 51 # 168  
 Zimmerman, George CME Consulting  
 Comment Type ER Comment Status D Editorial  
 Table 33-1a Notes 1 through 4 have leading dashes  
 SuggestedRemedy  
 delete leading dashes on footnotes 1 through 4.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.1.4.2 P 23 L 32 # 169  
 Zimmerman, George CME Consulting  
 Comment Type ER Comment Status D Editorial  
 Somewhere in the editing, we've made enough holes in this swiss cheese that the requirement is unclear. "Operation for all types shall meet the resistance unbalance requirements stated in ISO/IEC 11801:2002."  
 Operation of what, for what, what requirements? Is this a requirement on the port (PI) or on the link section. I'm assuming first its on the link section below, then on the PSE/PD.  
 SuggestedRemedy  
 Rephrase similar to how it is in PHY requirements: "Link sections for all Types shall comply with the resistance unbalance requirements specified in ISO/.IEC 11801:2002/"  
 If it is on the PSE/PD operation, then state, "PSE PI and PD PI electrical requirements in Clauses 33.2 and 33.3 shall be met over link sections with the full range of resistance unbalance specified in ISO/IEC 11801:2002."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Rephrase similar to how it is in PHY requirements: "Link sections for all Types shall comply with the resistance unbalance requirements specified in ISO/.IEC 11801:2002/"

Cl 33 SC 33.2.4.6 P 42 L 14 # 170  
 Zimmerman, George CME Consulting  
 Comment Type ER Comment Status D PSE State Diagram  
 definition of set\_parameter\_type has gotten convoluted  
 SuggestedRemedy  
 Recast definition as a table with permissible values for each PSE type, or reference such a table if it exists.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 The comment and suggested remedy is not clear enough to know what should be changed.

Cl 33 SC 33.3.4 P 82 L 1 # 171  
 Zimmerman, George CME Consulting  
 Comment Type ER Comment Status D 4PID  
 Editor's note has been resolved - no change to valid or non valid signatures is required by 4PID.  
 SuggestedRemedy  
 Remove editor's note.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 Based on the number of comments related to 4PID and this text, I suggest we keep the editor's note there for now.

Cl 33 SC P 88 L 17 # 172  
 Zimmerman, George CME Consulting  
 Comment Type ER Comment Status D PSE Power  
 Table 33-18: 'guaranteed'? this is a requirement already. the word is redundant. Also on page 90, lines 1 and 4.  
 SuggestedRemedy  
 Remove the word guaranteed (4 occurances, 2 in the table and 2 on page 90)  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 I believe this word was added as part of the Extended Power work and is needed to distinguish between those classes with extended power and those without.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.3.8 P 95 L 8 # 173  
 Zimmerman, George CME Consulting

Comment Type ER Comment Status D PD MPS

Table 33-19 deletes the Input Current requirement to the MPS, doesn't mention the reference to 33.3.8 as strikeout in the row for input current, and, when I check 33.3.8, it is still written in terms of input current, without a requirement striken out. While the impedance may imply a current, the current remains the requirement and should be in the table, OR, should be removed from 33.3.8, which would be changing requirements on existing devices. ALSO, the text should show appropriate edits and strikeout from the base text - which it doesn't. (see earlier comment)

SuggestedRemedy

Reinstate strikeout text on Input current requirement, add reference to 33.3.8 back to the "additional information" column, as is in the 802.3bx D3.0 text, and renumber Input resistance and Input capacitance,

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This line was replaced by item 1 in Table 33-19a.

Editor to add reference to Table 33-19a in text where appropriate (after mention of lport\_MPS).

Editor to add note to bottom of Table 33-19a: "See 33.3.8 for more information."

CI 33 SC 33.4.4 P 99 L 3 # 174  
 Zimmerman, George CME Consulting

Comment Type ER Comment Status D AES

10GBASE-T requirement is TBD, and this seems to have fallen off our action item list.

SuggestedRemedy

Add an editor's note flagging that this requirement needs contributions to fill in.

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

CI 01 SC 1.4 P 18 L 14 # 175  
 Zimmerman, George CME Consulting

Comment Type T Comment Status D Editorial

connection should be plural there are 2 sets.

SuggestedRemedy

change connection to connections

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

CI 33 SC 33.1.1 P 19 L 53 # 176  
 Zimmerman, George CME Consulting

Comment Type T Comment Status D Cabling

Type 2 requires 11801:1995 Class D unless we explicitly meant to change the base standard for 802.3at to delete category 5 operation.

See also on page 23, line 11

SuggestedRemedy

Change 'Type 2 and Type 3 operation requires ISO/IEC 11801:2002 Class D or better... and a derating...' to 'Type 2 operation requires ISO/IEC 11801:1995 Class D or better cabling, and Type 3 operation requires ISO/IEC 11801:2002 Class D or better cabling. Both require a derating...'

Make a similar change on page 23, line 11.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 33 SC 33.1.4.1 P 23 L 17 # 177  
 Zimmerman, George CME Consulting

Comment Type T Comment Status D System Power

Type 2 operation never has all cable pairs energized

SuggestedRemedy

Consider whether type 2 operation requires a 10 deg C reduction, since only half of the pairs are energized. (Delete type 2 from sentence, retain type 3)

Proposed Response Response Status W

PROPOSED REJECT.

This is already included in the sentence.



IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.1.4.1 P 23 L 20 # 178  
 Zimmerman, George CME Consulting

Comment Type T Comment Status D System Power

Add reference to TSB-184-A for operation on all types in this standard.  
 The editor's note on line 25 is insufficient, because the sentence limits the TIA document to just Type 2 and needs to be changed.

SuggestedRemedy

See comment.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change Sentence from: "Additional cable ambient operating temperature guidelines for Type 2 operation are provided in ISO/IEC TR 29125 [B49]1 and TIA TSB-184 [B60]."

To: "Additional cable ambient operating temperature guidelines for Type 2, Type 3, and Type 4 operation are provided in ISO/IEC TR 29125 [B49]1 and TIA TSB-184 [B60]."

Cl 33 SC 33.2.2 P 25 L 35 # 179  
 Zimmerman, George CME Consulting

Comment Type T Comment Status D Midspan

10GBASE-T Midspan PSEs may not be compatible with 10BASE-T or 100BASE-TX due to magnetics OCL required. Requires further study.

SuggestedRemedy

Delete 10BASE-T and 100BASE-TX from line 35, insert editor's note after description of 10GBASE-T midspan (on line 37):  
 "Editor's note (to be removed prior to publication) - Compatibility of 10GBASE-T midspans with 10BASE-T and 100BASE-TX requires further study, specifically, technical feasibility of the OCL requirements for 10BASE-T /100BASE-TX interoperability in conjunction with 10GBASE-T bandwidth needs to be shown."

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 33 SC 33.3.5.3 P 86 L 27 # 180  
 Zimmerman, George CME Consulting

Comment Type T Comment Status D Editorial

can we really specify what PD 'consumes'? we can only specify what it draws.

SuggestedRemedy

change 'consume' to 'draw'

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

Cl 33 SC 33.1.4 P 22 L 5 # 181  
 Zimmerman, George CME Consulting

Comment Type TR Comment Status D Editorial

Editor's note appears to have been overcome by events - Type 4 is in the table now.

SuggestedRemedy

Delete editor's note.

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

Cl 33 SC 33.1.4 P 22 L 33 # 182  
 Zimmerman, George CME Consulting

Comment Type TR Comment Status D Editorial

Note that extended power will be addressed in separate work is misleading and suggests in a different standard.  
 Are the values for Type 3 & Type 4 extended power current agreed by the TF?

SuggestedRemedy

change 'will be address in separate work' to 'is presently under study in this draft'

change 'Currently for extended power,' to 'Currently, the proposed values for extended power are as follows:'

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.1.4 P 22 L 39 # 183  
 Zimmerman, George CME Consulting

Comment Type TR Comment Status D Unbalance

The note is incomprehensible. What is being asked of TIA? Of course, there is a temperature rise with any current. I think the question is, what is the rise, and is it acceptable - however, the question needs more precision.

SuggestedRemedy

Form the question for TIA and ask as a liaison. Delete the note text:  
 "TIA will have to tell us regarding the temperature rise if 4P total current is 2\*cable per Table 33-1; What if total 4P current is kept but one of the pairs has the above pair with maximum Icont-2P\_unb and other pair has the rest. Do they expect temperature rise? Based on the mathematical work we did we expect that it will not affect temperature rise over the cable."  
 Optionally replace the note text with a simple question and a reference to the supporting liaison document.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

I believe we have asked TIA or others about temperature rise as a result of unbalance (we expect less temperature rise in the presence of unbalance). What is the status of that liaison?

Replace note beginning "TIA will have..." with:

"Liaison underway with TIA and others to study the effect of unbalance on temperature rise ." Add link to liaison.

CI 33 SC 33.1.4.1 P 23 L 9 # 184  
 Zimmerman, George CME Consulting

Comment Type TR Comment Status D System Power

Category 6a, which is required for 10GBASE-T and is often cited as recommended for new installations for PoE (see TIA TSB-184A draft) is not in ISO/IEC 11801-2002. It is in ISO/IEC 11801:2002/Amendment 1, and will be in ISO/IEC 11801-1 Edition 3, which should be complete by the time 802.3bt is complete.

SuggestedRemedy

Insert ", ISO/IEC 11801:2002/Amendment 1, and ISO/IEC 11801-1 Edition 3(draft)" after "with the additional requirement... 25 ohms or less" on line 12 (note the new references have that requirement).  
 Add editor's note to update ISO/IEC 11801-1 Edition 3 draft reference as it proceeds.

Proposed Response Response Status W

CI 33 SC 33.2.0a P 24 L 42 # 185  
 Zimmerman, George CME Consulting

Comment Type TR Comment Status X PSE Types

New 2-pair PSEs are out of scope of the PAR. The scope of the PAR has been maintained by the Chair in many cases as limiting to 4 pair operation and associated management information. Introduction of new types of 2 pair PSE and PDs is an expansion of the scope which would require an amendment to the PAR.

SuggestedRemedy

Remove 2 pair Type 3 PSEs (both 15.4W and 30W) from table 33-1a.

Proposed Response Response Status W

This should be discussed by the group.

CI 33 SC 33.2.4.6 P 40 L 52 # 186  
 Zimmerman, George CME Consulting

Comment Type TR Comment Status D PSE State Diagram

do\_connection\_check needs a home in the state diagram. According to 33.2.5.0a it has to occur prior to classification. It also shouldn't happen significantly before detection. The Task Force has been clear that it doesn't want connection check pinned down, so the only place left is to put it inside the "DO\_DETECT" state in parallel with do\_detection (but not included in do\_detection).

SuggestedRemedy

add "do\_connection\_check" to state START\_DETECT in Figure 33-9a.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

We need to add it to the state diagram for Types 3 and 4, but adding it to Start\_Detection would require you to finish detection and the connection check within tdet.

We need to create a Type 3 and 4 state diagram that considers these issues.

Accepting this comment results in no changes to the text.

See comment # 225.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.4.6 P 42 L 41 # 187  
 Zimmerman, George CME Consulting

Comment Type TR Comment Status D PSE State Diagram

Text has become convoluted. There is the PSE Type, then there is the PD Type, then there are the PSE Type requirements that the PSE is applying, then there are missing words, and the fact that PSEs don't "choose", having the option 'may' is enough. Note remedy uses \_sub\_ to indicate proposed subscripts.

In the process the text has gotten wrong as well, e.g., a PSE shouldn't be supplying Ptype greater than the PD type allows....

SuggestedRemedy

Rewrite. Replace paragraph with proposed text below:  
 "When a PSES powers a PD of lower Type (call this Type\_sub\_PD) than its own native type (Type\_sub\_PSE), the PSE shall meet the PI electrical requirements of the PD Type (Type\_sub\_PD), except for ICon-2P, ILIM-2P, TLIM-2P, and PType, for which the PSE shall meet the requirements of any PSE type Type\_sub\_PD <= PSE Type <= Type\_sub\_PSE.

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 33 SC 33.2.4.7 P 44 L 1 # 188  
 Zimmerman, George CME Consulting

Comment Type TR Comment Status D PSE State Diagram

Figure 33-9 (continued) The motion in May was to revert to a "Type 1 and Type 2" PSE state diagram as is currently in 802.3bx (802.3-2012). Figure 33-9 is part of this, but is not reverted and contains new classification matter from 802.3bt, which is out of scope.

SuggestedRemedy

Replace Figure 33-9 (continued) with the original Type 1 and Type 2 PSE state diagram per the motion in May.

Proposed Response Response Status W  
 PROPOSED ACCEPT.

EZ

Cl 33 SC 33.2.5.0a P 51 L 20 # 189  
 Zimmerman, George CME Consulting

Comment Type TR Comment Status D Connection Check

Connection check determines the signature type on the link segment. The architecture of the PD is a much more general thing.

SuggestedRemedy

change "determine the architecture of the PD" with "determine whether the a single signature or dual signature is attached to the two pair-sets in the link section."

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

change "determine the architecture of the PD" with "determine whether a single signature or dual signature is attached to the two pair-sets in the link section."

Cl 33 SC 33.2.5.6 P 55 L 24 # 190  
 Zimmerman, George CME Consulting

Comment Type TR Comment Status D Editorial

Annex-TBD is missing, even in outline form - what is in it? At least an editor's note of what is going to be in it, otherwise the reference is simply confusing and premature

SuggestedRemedy

Add at least a placeholder for the referenced annex in the draft, with an editor's note on the subject of the proposed content.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

Editor to add Annex 33B, update reference in this sentence, and fill Annex 33B with "Editor's note to be removed prior to publication: This annex will include informative autoclass material."

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.7 P 62 L 3 # 191  
 Zimmerman, George CME Consulting

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

Type 1 and Type 2 PSEs conform to 33-9, 33-9 continued and 33-10. Type 3 and Type 4 PSEs conform to 33-9a and continuations.

*SuggestedRemedy*

Insert "Type 1 and Type 2" before PSE behavior  
 Insert sentence after "Figure 33-10", as follows:  
 "Type 3 and Type 4 PSEs conform to the state diagrams in Figure 33-9a and its continuations and Figure 33-10."

Proposed Response Response Status **W**

PROPOSED ACCEPT.

EZ

Cl 33 SC 33.3.1 P 74 L 38 # 192  
 Zimmerman, George CME Consulting

Comment Type **TR** Comment Status **D** PD PI

The draft of this section does NOT show an edit from the existing version of clause 33. This calls into question the ENTIRE draft and process. Taking out the strikeouts and adds, Draft 1.0 shows the existing text would be "The PD shall be capable of accepting power on either of two sets of PI conductors and may accept power on both pair sets. The two conductor..." 802.3bx draft 3.0 has for this paragraph, "The PD shall be capable of accepting power on either of two sets of PI conductors. The two conductor..." NO MENTION of may accept power on both pair sets. that is an 802.3bt ADD.

*SuggestedRemedy*

Editor to show "and may accept power on both pair sets" as underlined text, AND, editor to review entire draft relative to 802.3bx for other adds.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

EZ

Cl 33 SC 33.3.1 P 74 L 41 # 193  
 Zimmerman, George CME Consulting

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

The name of the variable is maintain\_4pair\_power see zimmerman\_3bt\_02c\_0515 slide 9, and page 35, line 15.

*SuggestedRemedy*

change "maintain\_power\_signature" to "maintain\_4pair\_power"

Proposed Response Response Status **W**

PROPOSED ACCEPT.

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.3.6 P 87 L 1 # 194  
 Zimmerman, George CME Consulting

Comment Type TR Comment Status D

Do we mean to restrict a Type 3 from identifying if it is connected to a Type 4 PSE? (or similarly, a Type 2 PD from identifying it is connected to a Type 3 PSE?) - that's what this text says. I think we want to specify that a PD recognizes and identifies a PSE type up to it's own type.

The text as written causes a Type 3 PSE to go unidentified or to be randomly identified as either Type 1 or Type 2 by a Type 2 PD.

SuggestedRemedy

Replace paragraph beginning with "A Type 2 PD" as follows:  
 "A PD shall identify any PSE type up to and including it's own type (e.g., a Type 2 PD shall recognize a Type 1 or Type 2 PSE (see figures 33-16), a Type 3 PD shall recognize a Type 1, Type 2 or Type 3 PSE, and a Type 4 PD shall recognize PSEs up to Type 4). A PD may identify a PSE of higher type than itself as its Type, e.g., a Type 2 PD may identify a Type 3 PSE as a Type 2."

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

This sentence should be changed, but the comment is not correct.

Type 4 PDs (class 7/8) should be able to identify all types based strictly on the number of fingers. Type 3 PDs should be able to identify the types of PSEs up to their power level. For example, a Class 3 Type 3 PD only needs to tell the difference between a Type 1 and Type 3 PSE, and even then it only cares about the difference if it will do MPS pulsing.

Change paragraph to:

A Type 2 PD shall identify the PSE Type as either Type 1 or Type 2 (see Figure 33-16).

A Type 3 PD shall identify the PSE Type as either Type 1 or Type 2 if it is a class 4 PD and be able to identify the PSE Type as Type 1, Type 2, or Type 3 if it is a class 5 or 6 PD. Type 3 PDs may also differentiate Type 3 PSEs from Type 1 and Type 2 PSEs by monitoring the length of the first class event.

A Type 4 PD shall identify the PSE Type as either Type 1, Type 2, Type 3, or Type 4.

CI 79 SC 79.3.2.6b(Table 79-6b) P 156 L 2629 # 195  
 Zhuang, Yan Huawei Technologies

Comment Type T Comment Status D DLL

Table 79-6b  
 Connection check is already used to indicate PD signatures.  
 Revise the meaning of PD PI bit to indicate PD loads for PSEs, so as to support the dual interface PD senario described in L2 ad hoc and avoid current overloaded described in "Consideration on Connection Check" presented in Jan 2015 meeting.

SuggestedRemedy

Replace the existing text  
 "1 = Dual signature. PClass\_PD is the sum of the indicated PD mode power class values.  
 0 = Single signature. PClass\_PD is indicated by either PD mode power class values."  
 to:  
 "0= The PD is a single load. The Mode class on each pair-set shall be the same.  
 1= The PD is a dual load. Each Mode class power is used to determine the power to provide to the Mode."

Proposed Response Response Status W  
 This should be discussed by the group as I did not attend the L2 Ad Hoc.  
 Would OBE comment # 253.

CI 33 SC 33.2.3 P 32 L 30 # 196  
 Bullock, Chris Cisco Systems

Comment Type E Comment Status D Editorial

For clarity, the order of the columns in Table 33-2a should match the order of the columns in Tabs 33-2.

SuggestedRemedy

In Table 33-2a, swap the entire column "Alternative A (MDI)" with the entire column "Alternative A (MDI-X)"

Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.6 P 57 L 35 # 197  
 Bullock, Chris Cisco Systems  
 Comment Type T Comment Status D PSE Classification  
 "Valid classification results are Classes from 0 to 8, as listed in Table 33.7."  
 The paragraph containing the above statement is in reference to Type 1 PSEs. Since Type 1 PSEs do not support multiple event classification, the valid classes are from 0 to 4.  
 SuggestedRemedy  
 Change the text back to original"  
 "Valid classification results are Classes 0,1,2,3, and 4, as listed in Table 33.7"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.2.7 P 64 L 25 # 198  
 Bullock, Chris Cisco Systems  
 Comment Type T Comment Status D PSE MPS  
 Item 18 in Table 33-11: Tmpdo  
 Multiport PSE implementations that utilize separate controllers for pair-sets could require more time to handle MPS for both pair-sets.  
 SuggestedRemedy  
 Change Tmpdo (min) from 0.354s to 0.320s  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 33 SC 33.4.1 P 96 L 30 # 199  
 Bullock, Chris Cisco Systems  
 Comment Type T Comment Status D  
 Item 3 in Table 33-19a: Tmpdo\_pd  
 Related to comment requesting Tmpdo to be changed from 0.354s to 0.320s. We should also adjust Tmpdo\_pd in order to ensure that there is sufficient margine in the spec.  
 SuggestedRemedy  
 Change Tmpdo\_pd (max) from 318ms to 300ms for Type 3,4 If long first class event.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl TOC SC NA P 13 L 17 # 200  
 Dove, Daniel Dove Networking Solut  
 Comment Type ER Comment Status D Editorial  
 Typo on word poweer.  
 SuggestedRemedy  
 Replace with word power.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.1.4 P 22 L 47 # 201  
 Dove, Daniel Dove Networking Solut  
 Comment Type ER Comment Status D Editorial  
 Grammar error "at PSE PI".  
 SuggestedRemedy  
 Replace with "at PSE's PI".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 23  
 EZ

Cl 33 SC 33.1.4.1 P 23 L 6 # 202  
 Dove, Daniel Dove Networking Solut  
 Comment Type TR Comment Status D Editorial  
 The word "approximately" is inappropriate  
 SuggestedRemedy  
 Replace with the word "essentially" as this is more appropriate in this context  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

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CI 33 SC 33.1.4.1 P 23 L 8 # 203  
 Dove, Daniel Dove Networking Solut  
 Comment Type ER Comment Status D System Power  
 Incorrect statement  
 SuggestedRemedy  
 Replace "found" with "typically found"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

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CI 33 SC 33.2.2 P 25 L 24 # 204  
 Dove, Daniel Dove Networking Solut  
 Comment Type E Comment Status D Editorial  
 How do we deal with some of the new technologies like 2.5G, 5G and 100T1? Should we name them based on type of technology or bandwidth rather than specific to PHY?  
 SuggestedRemedy  
 Spend some discussion with group deciding if we want this area to require constant update and change as new PHYs are introduced  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Accepting this comment results in no changes to the text.

---

CI 33 SC 33.2.2 P 31 L 50 # 205  
 Dove, Daniel Dove Networking Solut  
 Comment Type TR Comment Status D Definitions  
 Missing descriptive illustrations for Single/Dual signature PDs  
 SuggestedRemedy  
 Add figure(s) showing single signature PD and dual signature PD configuration.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 We should add definitions of single-signature and dual-signature PDs to 1.4. Figures would begin to infringe on implementations.

Add Definitions from abramson\_03\_0315 (shown below) to 1.4:

Single-Signature PD: A PD that shares the same detection signature, classification signature, and maintain power signature between both pair sets.

Dual-Signature PD: A PD that has independent detection signatures, classification signatures, and maintain power signatures on each pair set.

---

CI 33 SC 33.2.3 P 32 L 38 # 206  
 Dove, Daniel Dove Networking Solut  
 Comment Type TR Comment Status D PSE Types  
 Missing explanation for why AltA (MDI) and AltB(X) are not allowed for Type 4 PSEs  
 SuggestedRemedy  
 Add explanation in the text  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 No reason to add explanation to text. The requirements are the important part.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.2.4.3 P 34 L 41 # 207  
 Dove, Daniel Dove Networking Solut  
 Comment Type ER Comment Status D Editorial  
 Wrong word  
 SuggestedRemedy  
 Replace "yields" with "yield".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 208  
 EZ

CI 33 SC 33.2.4.7 P 44 L 54 # 210  
 Dove, Daniel Dove Networking Solut  
 Comment Type TR Comment Status D PSE State Diagram  
 This is the Type 3 and Type 4 PSE Classification State Diagram  
 SuggestedRemedy  
 Replace the diagram with the original diagram (802.3at-2012)  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 188.  
 EZ

CI 33 SC 33.2.4.3 P 34 L 41 # 208  
 Dove, Daniel Dove Networking Solut  
 Comment Type ER Comment Status D Editorial  
 Wrong word  
 SuggestedRemedy  
 Remove word "not" or replace sentence with "do\_detection yields "valid" on both pair sets.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change "does not yield" to "yields" in True definition. Change "yields" to "yield" in False definition.  
 EZ

CI 33 SC 33.2.4.7 P 45 L 30 # 211  
 Dove, Daniel Dove Networking Solut  
 Comment Type ER Comment Status D Editorial  
 The state diagrams were inserted as images for temporary placement.  
 SuggestedRemedy  
 These need to be constructed in FrameMaker and formatted for the proper page width/font/etc.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

CI 33 SC 33.2.4.6 P 41 L 11 # 209  
 Dove, Daniel Dove Networking Solut  
 Comment Type ER Comment Status D Editorial  
 Inconsistent naming of "dual-signature" ie: hyphenated  
 SuggestedRemedy  
 Do a word search and replace "dual-signature" with "dual signature"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Replace any occurrences of "dual signature" with "dual-signature" as they should be used as adjectives describing a PD or configuration.  
 EZ

CI 33 SC 33.2.4.7 P 45 L 30 # 212  
 Dove, Daniel Dove Networking Solut  
 Comment Type ER Comment Status D PSE State Diagram  
 The naming of the hierarchical blocks in the state diagram would be more clear if each section were properly identified.  
 SuggestedRemedy  
 For each section, use a different title. Ex: PSE Main State Diagram, PSE Searching State Diagram, PSE Delivering Power State Diagram, etc.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ



IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.2.4.7 P 46 L 30 # 213  
 Dove, Daniel Dove Networking Solut  
 Comment Type **TR** Comment Status **X** PSE State Diagram  
 Missing T14A  
 SuggestedRemedy  
 Add T14A  
 Proposed Response Response Status **W**  
 Where?

CI 33 SC 33.2.4.7 P 48 L 47 # 214  
 Dove, Daniel Dove Networking Solut  
 Comment Type **TR** Comment Status **D** PSE State Diagram  
 Missing Type 3 and Type 4 Classification State Diagram  
 SuggestedRemedy  
 Add The diagram, title, etc.  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment #231  
 EZ

CI 33 SC 33.2.4.7 P 50 L 29 # 215  
 Dove, Daniel Dove Networking Solut  
 Comment Type **ER** Comment Status **D** Editorial  
 Typo "Detec\_Eval"  
 SuggestedRemedy  
 Replace with "Detect\_Eval"  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.  
 EZ

CI 33 SC 33.2.4.7 P 50 L 35 # 216  
 Dove, Daniel Dove Networking Solut  
 Comment Type **ER** Comment Status **D** Editorial  
 Typo "poweer"  
 SuggestedRemedy  
 Search/Replace with "power"  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.  
 EZ

CI 33 SC 33.2.4.7 P 50 L 51 # 217  
 Dove, Daniel Dove Networking Solut  
 Comment Type **TR** Comment Status **D** PSE Detection  
 The last statement in this paragraph claims to preserve clarity, but I think it actually reduces clarity  
 SuggestedRemedy  
 Either clarify exactly why the link is not being called out, or correct this statement to make it more clear  
 Proposed Response Response Status **W**  
 PROPOSED REJECT.  
 This is existing text that we are not changing as part of .3bt.  
 This can be filed as a maintenance request.

CI 33 SC 33.2.7.7 P 68 L 48 # 218  
 Dove, Daniel Dove Networking Solut  
 Comment Type **ER** Comment Status **D** Editorial  
 Typo "fromany"  
 SuggestedRemedy  
 Replace with "from any"  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 148  
 EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 335.1.1a P 110 L 42 # 219  
 Dove, Daniel Dove Networking Solut  
 Comment Type ER Comment Status D Editorial  
 Typo "poweer"  
 SuggestedRemedy  
 Search/Replace with "power"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 154.  
 EZ

Cl 33 SC 33.2.4.7 P 46 L 19 # 220  
 Dove, Daniel Dove Networking Solut  
 Comment Type TR Comment Status X Pres: State Diagram  
 The do\_connection\_check function needs to be added. 4PID function may also need to be added  
 SuggestedRemedy  
 See dove\_01\_0615 for specific recommendations.  
 Proposed Response Response Status W  
 Waiting for presentation

Cl 33 SC 33.1.4.1 P 23 L 5 # 221  
 Schindler, Fred Seen Simply  
 Comment Type ER Comment Status D System Power  
 The added text appers to suggest that CAT-3 cables may be used for higher than class-4 power levels, which is not permitted by other specification requirements. The remainder of the sentence does not provide a requirement beyond what is already stated in the standard.  
 SuggestedRemedy  
 Strike the added sentence,  
 "The supply of power over the data connection is intended to operate with no additional requirements to the cabling that is normally installed for data usage. This is approximately true but may require some further attention. Power at Type 1 power levels may be transmitted over all specified premises cabling without further restrictions. Higher power levels may require heavier guage conductors than are found in Class C/Category 3 cabling and (more uncommonly) in some lighter guage Class D or better cable."  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 I don't interpret the sentences that way. Do you have better text?

Cl 33 SC 33.2.2 P 25 L 38 # 222  
 Schindler, Fred Seen Simply  
 Comment Type ER Comment Status D Midspan  
 I do not see a reason for the added sentence. The data rate passed through a midspan does not determine whether it is 2P or 4P capable.  
 SuggestedRemedy  
 Strike the sentence,  
 "Additionally, 1000BASE-T and 10GBASE-T Midspan PSEs may be capable of 4-pair power."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.2.3 P 33 L 26 # 223  
Schindler, Fred Seen Simply

Comment Type TR Comment Status D 4-Pair Power

Type 3 PSE that provide more than 30W require both Alternatives.

*SuggestedRemedy*

Replace  
"Type 1, Type 2 or Type 3 PSEs shall implement Alternative A, Alternative B, or both. Type 4 PSEs shall implement Alternative A and Alternative B."

with  
"Type 1, Type 2 or Type 3 PSEs shall implement Alternative A, Alternative B, or both. Type 3 PSEs providing class 5 or 6 power levels and Type 4 PSEs shall implement Alternative A and Alternative B."

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 33 SC 33.2.4.4 P 35 L 7 # 224  
Schindler, Fred Seen Simply

Comment Type TR Comment Status D 4PID

This text used may confuse readers as to what this variable accomplishes.

*SuggestedRemedy*

Strike text, "is used to do physical layer 4PID".

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 33 SC 33.2.4.4 P 35 L 5 # 225  
Schindler, Fred Seen Simply

Comment Type TR Comment Status X 4PID

Variables,  
PD\_4pair\_candidate  
maintain\_4pair\_power  
deny\_dual\_sig\_4pair\_power

are provide without a related state diagram. Text related to these variables need to be left open for comment until the related state diagram is provided.

*SuggestedRemedy*

Keep this comment unresolved until the state diagram is provided and one subsequent comment cycle has occurred.

Proposed Response Response Status W

This comment to be left open.

CI 33 SC 33.2.4.4 P 35 L 27 # 226  
Schindler, Fred Seen Simply

Comment Type TR Comment Status X 4PID

The variable and the language for deny\_dual\_sig\_4pair\_power are not required for interoperability. They appear to be implementation specific. Some dual signature PDs may accept power on both pair sets. Whether the PSE powers a PD is implementation dependent.

*SuggestedRemedy*

Use the results of the connection check, which indicates whether a PD is a single or dual signature PD to make choices already permitted by the specification.

Strike variable deny\_dual\_sig\_4pair\_power and associated text.

Proposed Response Response Status W

Based on the number of comments, there needs to be a big discussion about 4PID and how it is currently implemented.

I would like to hear the group's opinion on this comment.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.4.4 P 39 L 3 # 227  
Schindler, Fred Seen Simply

Comment Type ER Comment Status D PSE State Diagram

Table 33-3 column pse\_dll\_capable may be replaced by text for easier processing by the reader.

SuggestedRemedy

On page 38, line 8 replace text,  
"See 33.6 for a description of Data Link Layer functionality and Table 33-3 for the allowed permutations of this variable with PSE Type and class\_num\_events." With  
"See 33.6 for a description of Data Link Layer functionality. Variable pse\_dll\_capable shall be TRUE for Type 2 PSEs with class\_num\_events of 1."

Note all occurrences of Table 33-3 were considered when creating this solution. PIC text is not addressed by this comment.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 33 SC 33.2.4.6 P 41 L 10 # 228  
Schindler, Fred Seen Simply

Comment Type ER Comment Status D Editorial

Fix Typo "wwhether".

SuggestedRemedy

Use "whether".

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

Cl 33 SC 33.2.4.6 P 41 L 48 # 229  
Schindler, Fred Seen Simply

Comment Type TR Comment Status D PSE State Diagram

Function do\_detection appears to be incomplete. Some PSE implementations will power one pairset when a valid detection signature is present. The text should be written with respect to PSE behavior.

SuggestedRemedy

Replace "valid: The PSE has detected a PD requesting power." With  
"valid\_A: The PSE has detected a valid PD detection signature on ALT A.  
valid\_B: The PSE has detected a valid PD detection signature on power on ALT B.  
valid\_AB: The PSE has detected a valid PD detection signature on power on ALT A and ALT B."

Strike out text,

"both\_alts\_valid:A Type 3 or Type 4 PSE has detected a PD requesting power on both pair sets."

Text,

"This variable indicates the presence or absence of a PD." Should be replaced by  
"This variable indicates the presence or absence of a valid PD detection signature."

.....

Flag this comment with FRS-2.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Replace "valid: The PSE has detected a PD requesting power." With  
"valid\_A: The PSE has detected a valid PD detection signature on ALT A.  
valid\_B: The PSE has detected a valid PD detection signature on ALT B.  
valid\_AB: The PSE has detected a valid PD detection signature on ALT A and ALT B."

Strike out text,

"both\_alts\_valid:A Type 3 or Type 4 PSE has detected a PD requesting power on both pair sets."

Text,

"This variable indicates the presence or absence of a PD." Should be replaced by  
"This variable indicates the presence or absence of a valid PD detection signature."

.....

Flag this comment with FRS-2.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.1.3 P 21 L 39 # 230  
Schindler, Fred Seen Simply

Comment Type TR Comment Status D Editorial

The definitions (line 39 and line 41) referenced both the IEEE 802.3-2012 and the in progress revision P802.3bx/D2.0. I do not have the private password to check the unpublished P802.3bx/D2.0 draft. I am not able to confirm if this reference is acceptable or whether it is the same as the public specification.

SuggestedRemedy

If the text is the same in both referenced documents then remove the P802.3bx/D2.0 reference so that there is no confusion as to what the definition is.

I am okay with the definitions in the IEEE 802.3-2012 specification. If the definition has changed we should review the definition potentially accept or change it.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Accepting this comment cause no changes to the draft.

Cl 33 SC 33.2.4.7 P 44 L 1 # 231  
Schindler, Fred Seen Simply

Comment Type TR Comment Status D PSE State Diagram

The modified legacy state diagram for classification provides a suitable starting point for classification for all PSE Types. The new Figure 33-9a Type 3 and Type 4 PSE state diagram does not provide the details already covered by the improved legacy state diagram.

SuggestedRemedy

Replace the figure on page 44 with the legacy IEEE 802.3-2012 figure 33-9.

Then move the .3BT Draft 1.0 figure and caption after the last figure labeled "Figure 33-9A - Type 3 and Type 4 PSE state diagram (continued)." Change the "Figure 33-9-Type 1 and Type 2 PSE state diagram (continued)" to "Figure 33-9A - Type 3 and Type 4 PSE state diagram (continued)."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Partial OBE by comment # 188.

move the .3BT Draft 1.0 figure and caption after the last figure labeled "Figure 33-9A - Type 3 and Type 4 PSE state diagram (continued)." Change the "Figure 33-9-Type 1 and Type 2 PSE state diagram (continued)" to "Figure 33-9A - Type 3 and Type 4 PSE state diagram (continued)."

EZ

Cl 33 SC 33.2.4.7 P 47 L 1 # 232  
Schindler, Fred Seen Simply

Comment Type TR Comment Status D PSE State Diagram

The state diagram provided in Figure 33-9a does not include Type 3 and Type 4 PSE requirements. It is not suppose to include Type 1 and Type 2 requirements. It appears to only show Type 1 and Type 2 requirements.

SuggestedRemedy

Remove the state diagram on pages 47-49 and replace with, "Editor's Note: The state diagram for Type 3 and Type 4 PSEs needs further study and participants are encouraged to provide presentations to address this need."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Add Editor's Note in suggested remedy below Type 3/4 PSE State Diagram.

Cl 33 SC 33.2.4.7 P 45 L 1 # 233  
Schindler, Fred Seen Simply

Comment Type TR Comment Status D PSE State Diagram

The State Diagram provided in Figure 33-9a was created to be easier to follow than the existing approach. The existing approach takes two pages to cover Type 1 and Type 2 PSEs. The new approach takes 5 pages and does not yet cover classification and potentially other necessary requirements.

Other approaches should be considered and the suggested approach should be discussed to converge on a solution for Type 3 and Type 4 PSEs.

SuggestedRemedy

For all past PoE efforts, Task Force meeting time was devoted to discussing and refining state diagrams. I recommend that this approach is also taken during .3bt meetings and that we provide time for others to present alternative approaches to solving this problem.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

No changes to the text result from accepting this comment.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.5 P 50 L 46 # 234  
Schindler, Fred Seen Simply

Comment Type TR Comment Status D PSE Detection

The text,  
"Specifically, Type 3 and Type 4 PSEs shall apply the detection probe to both pair sets prior to applying power to 4 pairs."

Uses nonstandard language, adds text that may confuses the reader that is not required. The prior sentence requires PSEs to only power pair-sets with a valid detection signature. This also applies to Type 3 and Type 4 devices.

The added sentence requires a detection probe on both pair sets. This language is not clear. Is a probe without a valid detection all that is necessary? Is the probe done on both pair sets at the same time?

*SuggestedRemedy*

Strike the sentence,

"Specifically, Type 3 and Type 4 PSEs shall apply the detection probe to both pair sets prior to applying power to 4 pairs."

Proposed Response Response Status W

PROPOSED ACCEPT.

OBE by comment # 9.

EZ

Cl 33 SC 33.2.6.1 P 58 L 11 # 235  
Schindler, Fred Seen Simply

Comment Type TR Comment Status D PSE Classification

The text,  
"The PSE shall provide to the PI VClass with a current limitation of IClass\_LIM, as defined in Table 33-10." Need to be updated to support Type 3 and Type 4 classification.

Application of the classification voltage to a pair set with an invalid detection signature may permanently damage a device. For example, Bob Smith termination resistors (0.125W typically). During detection, which is not likely to cause device damage, the PSE may provide 5mA short-circuit current and up to 30V open circuit. This permits up to 37.5 mW to device during detection. Classification permits (20.5V x 0.1A) up to 2.1W to be dissipated in a device. Legacy PSEs detect, classify and power on using the same Alternative (pair set).

New PSE may detect, classify, and power on, on all pair sets of the PI. Therefore, we need to prevent damage to network equipment.

*SuggestedRemedy*

Modify the sentence as follows,  
"The PSE shall provide to a pair set VClass with a current limitation of IClass\_LIM, as defined in Table 33-10 only for a pair set with a valid detection signature."

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 33 SC 33.2.5.6 P 57 L 45 # 236  
Schindler, Fred Seen Simply

Comment Type TR Comment Status D DS behavior

The text needs to be updated to support Type 3 and Type 4 classification.

*SuggestedRemedy*

Add to the end of the paragraph on line 45, the sentence,  
"Both pair sets of the PI attached to a Dual Signature PDs shall be classified by Type 3 and Type 4 PSEs."

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.5.6 P 57 L 49 # 237  
Schindler, Fred Seen Simply

Comment Type TR Comment Status D 4PID

Text needs to show that a TBD state diagram may identify single signature or dual signature PDs and how to process them.

Note: This comment is flagged with comment-FRS1 for easy searching.

*SuggestedRemedy*

After the paragraph ending on line 49, add the new paragraph,

"The connection check, described in 33.2.5.0, and the results of other system information, determine the value of variable pd\_4pair\_candidate, defined in 33.2.4.4. PSEs shall comply with the TBD state diagram, which determines the power requirements for pair sets predetermined to be connected to a PD capable of accepting power on both pair sets, see 33.2.5.6."

Proposed Response Response Status W

I don't understand the suggested remedy.

This addition seems reasonable, but the placement is wrong. The suggested remedy is to go in the classification section which is not correct.

In addition, I am unsure about the phrase "which determines the power requirements for pair sets predetermined to be connected to a PD capable of accepting power on both pair sets"

Cl 33 SC 33.2.7.7 P 68 L 43 # 238  
Schindler, Fred Seen Simply

Comment Type TR Comment Status D PSE Power

The changed text, "The "PSE lowerbound template" and "PSE upperbound template" are shown in Figure 33-14.

When connected to a single signature PD, a Type 3 or Type 4 PSE may remove power from both pair sets if the current draw exceeds the "PSE lowerbound template" on either pair set, and shall remove power from both pair sets if the current draw exceeds the "PSE upper bound template" on either pair set. When connected to a dual signature PD, a Type 3 or Type 4 PSE may remove power from the any pair set PI if the PI pair-set current meets or that exceeds the "PSE lowerbound template" and in Figure 33-14. Power shall be removed from the PI of a PSE before the PI current remove power from any pair set that exceeds the "PSE upperbound template". in Figure 33-14. Power may be removed from both pair sets any time power is removed from one pair set.'

Has broke legacy requirements, places unnecessary restrictions on PSEs, adds unnecessary text, and contains typos.

This new text no longer covers legacy PSEs. Permissible operations do not need to be repeated. The existing text addresses both legacy and new Types.

*SuggestedRemedy*

Restore the original text with the following minor edit,

'A PSE may remove power from the PI if the PI current meets or exceeds the "PSE lowerbound template" in Figure 33-14. Power shall be removed from a pair set of a PSE before the pair set current exceeds the "PSE upperbound template" in Figure 33-14.'

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Would OBE comment # 110 and all comments OBEd by comment # 110.

Change text to:

'A PSE may remove power from any pair set if the pair set current meets or exceeds the "PSE lowerbound template" in Figure 33-14. Power shall be removed from a pair set of a PSE before the pair set current exceeds the "PSE upperbound template" in Figure 33-14.'

See comment # 275 for more information.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.3.1 P 74 L 38 # 239  
 Schindler, Fred Seen Simply

Comment Type TR Comment Status D 4PID

The new sentence,  
 "Type 1 and Type 2 PDs wishing to avoid 4 pair power for longer than a minimal amount of time may signal this by a message via LLDP to the PSE setting the maintain\_power\_signature variable to false."

This text changes legacy behavior. PDs not identified as being capable of accepting power on both pair sets should never be exposed to voltages that exceed Vvalid, the detection voltage. Legacy PDs are required to provide an invalid detection signature on an unpowered pair set when powered on by a legacy PSE. An invalid detection signature indicates a PD does not want to be powered (33.2.5.4, 33.3.4).

*SuggestedRemedy*

Replace the sentence with, text that indicates how legacy PDs may show that they accept power on both pair sets.

"Type 1 and Type 2 PD may indicate their ability to accept power on both pair sets by providing a valid detection signature on an unpowered pairset requesting power. These PDs may indicate the ability to accept power on both pair sets using LLDP variable 4P-ID in Table 79-6b."

On page 81, line 51 replace legacy sentence,  
 "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."

With,  
 "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. A PD may present a valid detection signature on a pair set from which it is not drawing power when the PD is cable of accepting power on both pair sets. "

Proposed Response Response Status Z

PROPOSED REJECT.

This comment was WITHDRAWN by the commenter.

Replaced by comment # 254

Cl 33 SC 33.3.5.3 P 86 L 27 # 240  
 Schindler, Fred Seen Simply

Comment Type TR Comment Status D Autoclass

The requirements for the power measurement are incomplete. The period for the measurement is only (3.28 - 1.35) 1.93 ms long, which is not long enough to cancel out AC-line noise.

*SuggestedRemedy*

Change variable item 3, TAUTO\_PD2 minimum of Table 33-17a from 3.28 ms to 200 ms. Note that a sliding window 100 ms wide is an integer multiple of common 50 and 60 Hz AC line voltages.

Replace the existing sentence,  
 "After power up, PDs implementing Auto class shall consume their maximum power draw throughout the period bounded by TAUTO\_PD1 and TAUTO\_PD2, measured from when VPort\_PD rises above VPort\_PD min. The PD shall not draw more power than the power consumed during the time from TAUTO\_PD1 to TAUTO\_PD2 plus TBD% at any point until VPort\_PD falls below VReset\_th."

With,  
 "After power up, PDs implementing Auto class shall consume their maximum power draw throughout the period bounded by TAUTO\_PD1 and TAUTO\_PD2, averaged using a 100 ms wide sliding window, from when VPort\_PD rises above VPort\_PD min. The PD shall not draw more power than the power consumed during the time from TAUTO\_PD1 to TAUTO\_PD2 plus TBD% at any point until VPort\_PD falls below VReset\_th."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Partial OBE by comment # 113.

The rest is requirements on the PSE on how to measure the power draw and is covered in the PSE section.

No changes result from this comment.



IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.3.7 P 88 L 16 # 241  
 Schindler, Fred Seen Simply  
 Comment Type ER Comment Status D Table 33-18  
 For Table 33-18 item 4 for class 6 and class 8, add a note to guide the reader on permissible allowances. The reference note covers extended power.  
 SuggestedRemedy  
 "See 33.3.7.2" in the Additional information column of Table 33-18 for item 4, class 6 and 8.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 152.  
 EZ

Cl 33 SC 33.3.8 P 96 L 10 # 242  
 Schindler, Fred Seen Simply  
 Comment Type TR Comment Status D PD MPS  
 Table 33-19a does not cover Type 1 and Type 2 dual signature PDs but does cover Dual signature Type 3 and 4 PDs. MPS requirements for Dual signature PDs may be covered using text.  
 SuggestedRemedy  
 Strike Table 33-19a item 1, last row. Add the following text to 33.3.8, page 95, after line 2,  
 "The MPS requirements of Dual Signature PDs shall be half of the current value of Single Signature PDs."  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 The concept of dual-signature PDs was not covered by the previous standard (although they are clearly compliant to the standard). I do not believe we can add requirements Type 1 and Type 2 PDs now.

Cl 33 SC 33.4.9.1.4c P 107 L 34 # 243  
 Schindler, Fred Seen Simply  
 Comment Type ER Comment Status D AES  
 The text,  
 "Midspan PSEs intended for operation with 10GBASE-T (types 5 & 6 in Clause 33.4.9.1) are  
 Additionally required to meet the following parameters for coupling signals between ports relating to different link segments."  
 May be in error or is confusing. What are types 5 & 6?  
 SuggestedRemedy  
 Get an expert opinion and craft a sentence that does not confuse referenced types with PoE Types.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Are these Categories instead of Types?

Cl 33 SC 33.4.9.1.3 P 107 L 3 # 244  
 Schindler, Fred Seen Simply  
 Comment Type ER Comment Status D Editorial  
 Table 33-20 column "Midspan PSE Type" header does not reference PoE Types which may confuse the reader.  
 SuggestedRemedy  
 Replace the header with,  
 "Ethernet"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Replace header of first column with "Midspan PSE Variant"  
 EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.5.6 P 54 L 47 # 245  
 Schindler, Fred Seen Simply

Comment Type TR Comment Status X 4PID

The text "It shall be stored in the variable pd\_4pair\_candidate, defined in 33.2.4.4." Implies that variable pd\_4pair\_candidate indicates that the attached class 0 to 4 PD accepts power on both pair sets. This is incorrect.

The connection check (33.2.5.0) and detection alone are not able to determine if a legacy PD is able to accept power on both Modes. These methods reduce the likelihood of interoperability issues for PDs capable of accepting power on both Modes (single and dual signature PDs). The .3bt classification process provides a means to identify PD Types that accept power on both Modes. Classification results in the PD Type and LLDP data that indicates PD ability to accept power on both pair sets. Type 3 and Type 4 PDs are required to support power on both pair sets. Type 1 and Type 2 PDs may accept power on both pair sets.

*SuggestedRemedy*

Replace the entire text of 33.2.5.6 with,

"Type 3 and Type 4 PSEs shall determine whether an attached PD with classes 0 to 4 is a candidate to receive power on both pair sets prior to applying 4 pair power. This determination is referred to as 4PID. Classification in 33.2.6 may be used to obtain the PD Type and may be used to obtain LLDP variable PD 4P-ID in Table 79-6b. PSEs may power both PD modes of Type 3 and Type 4 PDs, and Type 1 and Type 2 PDs that have LLDP variable 4P-ID indicating that powering of both PD Modes is supported."

.....

Note that details related to the connection check and variable pd\_4pair\_candidate are covered in a separate comment. Flagged with comment-FRS-1.

Proposed Response Response Status W

Based on the number of comments, there needs to be a big discussion about 4PID and how it is currently implemented.

I would like to hear the group's opinion on this comment.

Cl 33 SC 33.2.4.4 P 34 L 40 # 246  
 Schindler, Fred Seen Simply

Comment Type TR Comment Status D PSE State Diagram

New variable both\_alts\_valid appears to be incomplete. Some PSE implementations will power one pairset when a valid detection signature is present. Note that the legacy standard did not have a variable to indicate a valid PD detection signature.

*SuggestedRemedy*

This variable should be replaced by do\_detection adjustments provided in the comment flagged by FRS-2.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 229

Cl 33 SC 33.2.6 P 55 L 13 # 247  
 Schindler, Fred Seen Simply

Comment Type TR Comment Status D PSE Classification

Sentence,  
 "Physical Layer classification occurs before a PSE supplies power to a PD when the PSE asserts a voltage onto the PI and the PD responds with a current representing a limited number of power classifications."

Need to be corrected for Type 3 and Type 4 PSEs.

*SuggestedRemedy*

"Physical Layer classification occurs before a PSE supplies power to a PD when the PSE asserts a voltage onto a pair set and the PD responds with a current representing a limited number of power classifications."

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.6 P 55 L 19 # 248  
Schindler, Fred Seen Simply

Comment Type ER Comment Status D PSE Classification

The new text,  
"The minimum power output by the PSE for a particular PD class is defined by Equation (33-3).  
Alternatively, PSE implementations may use VPSE = VPort\_PSE-2P min and RChan = RCh max when powering using two-pairs, or RChan = RCh/2 when powering using four-pair systems and to arrive at over-margined values as shown in Table 33-7."

may be improved by terms already used in the spec. and by correct grammar.

*SuggestedRemedy*

Replace with,  
"The minimum power output by the PSE for a particular PD class is defined by Equation (33-3).  
Alternatively, PSE implementations may use VPSE = VPort\_PSE-2P min and RChan = RCh max when powering using two pairs sets, or Rchan = RCh/2 when powering using four pair sets to arrive at over-margined values as shown in Table 33-7."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

"The minimum power output by the PSE for a particular PD class is defined by Equation (33-3).  
Alternatively, PSE implementations may use VPSE = Vport\_PSE-2P min and Rchan = RCh when powering using a single pair set, or Rchan = RCh/2 when powering using two pair sets to arrive at over-margined values as shown in Table 33-7."

Cl 33 SC 33.2.6 P 55 L 26 # 249  
Schindler, Fred Seen Simply

Comment Type ER Comment Status D Autoclass

The new text,  
"If the PD connected to the PSE performs Auto class (see 33.3.5.3 and Annex 33-TBD), the PSE may set its minimum power output based on the power drawn during Auto class, increased by at least (TBD 5%), with a maximum value defined in Table 33-17 of the corresponding PD class and a minimum of 4.0 Watts."

has a typo and a requirement that could be removed.

*SuggestedRemedy*

Replace Table 33-17 with Table 33-7. Discuss in the room whether removing the text, "and a minimum of 4.0 Watts." is necessary. A PD using Autoclass may draw up to a valid in the Table but the lower bound is determined by MPS.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Replace with "Table 33-17" with "Table 33-7"

The minimum of 4W was put in to ensure interoperability, it does not mean that the PD can't draw less current, it just means that the lowest PSE guaranteed output can be 4W (class 1). At these power levels Autoclass does not save much anyways.

Cl 33 SC 33.3.2 P 76 L 7 # 250  
Schindler, Fred Seen Simply

Comment Type ER Comment Status D PD Types

New text,  
"Type 3 and Type 4 PDs operating with a maximum power draw corresponding to Class 4 or greater implement both multiple-Event Physical Layer classification (see 33.3.5.2) and Data Link Layer classification (see 33.6) and advertise a class signature of 4, 5, 6, 7 or 8."

Conflicts with Table 33-13a. A Type 4 PD was created to support high power applications.

*SuggestedRemedy*

Replace text on page 76 with,

"Type 3 and Type 4 PDs operating with a maximum power draw corresponding to Class 4 or greater implement both multiple-Event Physical Layer classification (see 33.3.5.2) and Data Link Layer classification (see 33.6). Type 3 PDs advertise a class signature of 4, 5, or 6, while Type 4 PDs advertise a class signature of 7 or 8."

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.0a P 25 L 1 # 251  
Schindler, Fred Seen Simply

Comment Type TR Comment Status D PSE Types

New sentence,  
"2-Pair operation allowed if PSE is supplying Class 4 power or less."

Is incomplete and should be improved. Legacy PDs may only be powered on all pair sets once they have been identified as being capable of accepting power on all pair sets.

*SuggestedRemedy*

Replace the sentence with,  
"Powering of both pair sets is allowed for Type 1 or 2 PDs when the requirements of section 33.2.5.6 have been met. Type 1 or 2 PDs may be powered using one pair set."

Proposed Response Response Status W

Cl 33 SC 33.2.4.4 P 35 L 16 # 252  
Schindler, Fred Seen Simply

Comment Type TR Comment Status X 4PID

Text,

"maintain\_4pair\_power

This variable is provided for Type 3 and Type 4 PSEs to determine whether to continue providing a 4 pair power. It is initially set to the value of pd\_4pair\_candidate. It may be reset by a LLDP message, as a result of enforcement of class power draw, or at vendor discretion.

Values:False:Remove power from at least one pair set.

True: Power may be maintained on both pair sets."

Indicates a PD has been incorrectly powered on both pair sets. To avoid interoperability or damage to a network device, power should only be applied on one pair set of this PD.

*SuggestedRemedy*

A solution has been provided in the comment flagged with FRS-1 and other comments submitted.

The state machine when it is created shall prevent powering of a PD that does not accept power on all pair sets.

Strike the reference text.

Proposed Response Response Status W

Based on the number of comments, there needs to be a big discussion about 4PID and how it is currently implemented.

I would like to hear the group's opinion on this comment.

Cl 70 SC 79.3.2.6b P 156 L 26 # 253  
Schindler, Fred Seen Simply

Comment Type ER Comment Status D DLL

Improve the text for Table 79-6b item 2 by removing unnecessary information and clarifying what information is being conveyed.

*SuggestedRemedy*

Replace the existing text,  
"1 = Dual signature. PClass\_PD is the sum of the indicated PD mode power class values.  
0 = Single signature. PClass\_PD is indicated by either PD mode power class values."

With

"1 = Physical layer PClass\_PD is the sum of the indicated PD mode power class value.

0 = Physical layer PClass\_PD is indicated by either PD mode power class values."

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.3.1 P74 L 39 # 254  
Schindler, Fred Seen Simply

Comment Type TR Comment Status X 4PID

The new sentence,  
"Type 1 and Type 2 PDs wishing to avoid 4 pair power for longer than a minimal amount of time may signal this by a message via LLDP to the PSE setting the maintain\_power\_signature variable to false."

This text changes legacy behavior. PDs not identified as being capable of accepting power on both pair sets should never be exposed to voltages that exceed Vvalid, the detection voltage. Legacy PDs are required to provide an invalid detection signature on an unpowered pair set when powered on by a legacy PSE. An invalid detection signature indicates a PD does not want to be powered (33.2.5.4, 33.3.4).

SuggestedRemedy

Replace the sentence with, text that indicates how legacy PDs may show that they accept power on both pair sets.

"Type 1 and Type 2 PD may indicate their ability to accept power on both pair sets by providing a valid detection signature on an unpowered pairset requesting power. These PDs may indicate the ability to accept power on both pair sets using LLDP variable 4P-ID in Table 79-6b."

On page 81, line 51 replace legacy sentence,  
"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."

With,  
"When a PD becomes powered via the PI, it may present a non-valid detection signature on the set of pairs from which it is not drawing power. A PD that presents a valid detection signature on the pair set from which it is not drawing power may get powered by Type 3 and Type 4 PSEs."

Proposed Response Response Status W

Based on the number of comments, there needs to be a big discussion about 4PID and how it is currently implemented.

I would like to hear the group's opinion on this comment.

Cl 33 SC 33.2.6 P57 L 9 # 255  
Dwellely, David Linear Technology

Comment Type E Comment Status D PSE Classification

Table 33-8: Yes/No labels aren't as informative as they could be

SuggestedRemedy

Change "Yes" to "Valid" and "No" to "Invalid" throughout Table 33-8

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 127.

EZ

Cl 33 SC 33.1.4 P21 L 53 # 256  
Dwellely, David Linear Technology

Comment Type E Comment Status D Editorial

Extra comma: "A power system, consists..."

SuggestedRemedy

Remove: "A power system consists..."

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

Cl 33 SC 33.1.4 P21 L 54 # 257  
Dwellely, David Linear Technology

Comment Type E Comment Status D Power System

Sentence needs rewriting: "A power system is characterized as either Type 1, or Type 2, Type 3 or Type 4, by the lowest type number of the PSE or PD in a system..."

SuggestedRemedy

Replace with: "The power system Type is defined by the lowest Type of the PSE or PD in a system..."

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.5 P 51 L 1 # 258  
 Dwelley, David Linear Technology

Comment Type E Comment Status D PSE Detection

The first two sentences in this section are of questionable value and are not normative:  
 "The PSE is not required to continuously probe to detect a PD signature. The period of  
 time when a PSE is not attempting to detect a PD signature is implementation dependent."

*SuggestedRemedy*

Remove the second sentence. Consider removing the first sentence. Remove "Also" from  
 the third sentence.

Proposed Response Response Status W

PROPOSED REJECT.

This is text that we are not changing as part of the .3bt project.

This request can be filed as a maintenance request, but I would recommend the sentence  
 stay as it adds clarity.

Cl 33 SC 33.2.6 P 57 L 31 # 260  
 Dwelley, David Linear Technology

Comment Type E Comment Status D Table 33-8

Table 33-8, Note 1: "Limited" is probably not the right term here: "A Type 3 PSE that is  
 limited to class 3 power levels can be limited to 1-event physical layer classification."

A PSE may be capable of higher power levels but for various reasons may only intend to  
 provide Level 1 power to a PD - in this case it may (and probably should) only perform 1-  
 event class.

*SuggestedRemedy*

Replace note 1 with: "A Type 3 PSE that will provide class 3 or lower power levels may opt  
 to use 1-event physical layer classification."

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

Cl 33 SC 33.2.5.3 P 53 L 24 # 259  
 Dwelley, David Linear Technology

Comment Type E Comment Status D PSE Detection

This sentence is awful

*SuggestedRemedy*

Replace with: "A PSE shall detect a pair set within a link section with the following  
 characteristics as a valid PD detection signature:"

Proposed Response Response Status W

PROPOSED REJECT.

The suggested remedy does not include an offset voltage or current.

Cl 33 SC 33.2.0a P 25 L 1 # 261  
 Dwelley, David Linear Technology

Comment Type ER Comment Status D PSE Types

Note 4 doesn't add any information. Class 4 power or less is always 30W or less, which  
 falls into row 4 which allows 2-pair power. If we're trying to ensure that falling back from 4-  
 pair power to 2-pair power is compliant behavior, that's OK - but this note is not the right  
 place for it.

*SuggestedRemedy*

Remove note 4.

Proposed Response Response Status W

PROPOSED REJECT.

This note does address that 2-pair power is compliant if the power is less than 30W. If you  
 would like it removed, please suggest an alternate place to make that clarification.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.5 P 50 L 43 # 262  
 Dwelley, David Linear Technology

Comment Type ER Comment Status D PSE Detection

The "pair set" edits have changed the meaning of the original sentence - we still want to require the original behavior. The next (new) sentence mandates the T3/4 detection requirements adequately well by itself.

*SuggestedRemedy*

Restore original sentence: "In any operational state, the PSE shall not apply operating power to the PI until the PSE has successfully detected a PD requesting power."

Remove the word "Specifically" from line 47. Might also want to require success (not just application) in this sentence.

Proposed Response Response Status W

PROPOSED REJECT.

The following sentence only says the PSE shall apply the detection probe to each pair set, not that it detects a valid signature.

If we restore the original sentence a PSE could apply detection probes to both pair sets, detect a valid PD over only Alt-A and then apply 4-pair power. This is not acceptable.

Cl 01 SC 1.4 P 18 L 14 # 263  
 Dwelley, David Linear Technology

Comment Type ER Comment Status D Editorial

"pair set", "pair-set", and "pairset" have all been used in 802.3bt - pick one. "Pairset" is most unique and least likely to be misinterpreted.

*SuggestedRemedy*

Change "pair set" and "pair-set" to "pairset" throughout the document.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 15.

EZ

Cl 33 SC 33.3.7 P 88 L 21 # 264  
 Dwelley, David Linear Technology

Comment Type T Comment Status D Table 33-18

"71.3" watt class has too much precision. Cutting max power to 71W is only an 0.5% reduction in PD power. Rounding up runs the risk of non-interoperability with an LPS-limited PSE and a maximum-resistance cable plant.

*SuggestedRemedy*

Change to 71.3W to 71W.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 5.

Cl 33 SC 33.1.4 P 23 L 32 # 265  
 Dwelley, David Linear Technology

Comment Type T Comment Status D Unbalance

This defines cabling parameters: "Operation for all types shall meet the resistance unbalance requirements stated in ISO/ IEC 11801:2002."

*SuggestedRemedy*

Replace with: "Operation is assured when the channel meets the resistance unbalance requirements stated in ISO/ IEC 11801:2002."

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.2.4.1 P 33 L 50 # 266  
 Dwelley, David Linear Technology

Comment Type T Comment Status D PSE Backoff

This sentence is redundant and is not normative: "A Type 3 or Type 4 PSE that will deliver power over both Alternative A and Alternative B simultaneously...". Also, it seems like some "shalls" are missing - this is required behavior.

SuggestedRemedy

Remove sentence, and add the words "only" and "shall" to page 34, line 1: "A PSE performing detection using Alternative B \*only\* may fail to detect a valid PD detection signature. When this occurs, the PSE \*shall\* back off for at least Tdbo as specified..."

Consider also adding a "shall" to page 34 line 8.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Remove new sentence on page 33, line 50/51, and add the words "only" and "shall" to page 34, line 1: "A PSE performing detection using only Alternative B may fail to detect a valid PD detection signature. When this occurs, the PSE shall back off for at least Tdbo as specified..."

Pg 34, Line 8 should not be changed.

CI 33 SC 33.2.5.6 P 54 L 46 # 267  
 Dwelley, David Linear Technology

Comment Type T Comment Status D 4PID

"...and the results of other system information, as described in 33.2.5.0.". There is no "other information" defined in 33.2.5.0.

SuggestedRemedy

Remove "and the results of other system information"

While we're here, replace "&" with "and" in line 45.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Partial OBE by comment # 335.

Replace "&" with "and" in line 45.

EZ

CI 33 SC 33.2.4.4 P 37 L 4 # 268  
 Dwelley, David Linear Technology

Comment Type T Comment Status D PSE State Diagram

Add "on at least one pairset" to the end of the "TRUE" value definition

SuggestedRemedy

Add "on at least one pairset" to the end of the "TRUE" value definition

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Also replace all VPort\_PSE references to Vport\_PSE-2P.

CI 33 SC 33.2.7 P 62 L 22 # 269  
 Dwelley, David Linear Technology

Comment Type TR Comment Status X PSE Power

Table 33-11: Several symbols have -2p added to them. This breaks continuity with AF/AT - an AT device that claims to meet Vport\_pse will not find a spec with that name anymore. New titles with "per pair set" can stay, as all valid AF/AT devices operated over a single pairset.

SuggestedRemedy

Remove -2p suffixes from Items 1 and 4-10.

Proposed Response Response Status W

This should be discussed by the group.

CI 33 SC 33.3.7 P 87 L 36 # 270  
 Dwelley, David Linear Technology

Comment Type TR Comment Status X Table 33-18

Table 33-18: Several symbols have -2p added to them. This breaks continuity with AF/AT - an AT device that claims to meet Vport\_pd will not find a spec with that name anymore. New titles with "per pair set" can stay, as all valid AF/AT devices operated over a single pairset.

SuggestedRemedy

Remove -2p suffixes from Table 33-18, Items 1-3, 5, 6, and 9.

Proposed Response Response Status W

This should be discussed by the group.



IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.3.7 P 88 L 49 # 271  
 Dwelley, David Linear Technology

Comment Type **TR** Comment Status **X** Pres: Table 33-18

Table 33-18, item 9: Change to "per pair set capacitance" allows 360uF. We changed this to 180uF per Straw Poll 2 in Pittsburgh.

*SuggestedRemedy*

Change back to "PD capacitance"

Proposed Response Response Status **W**

Waiting for Presentation from Yair.

CI 33 SC 33.3.5.1 P 84 L 28 # 272  
 Dwelley, David Linear Technology

Comment Type **TR** Comment Status **D** PD Classification

If a Type 3/4 PD draws 0mA as Class 0, the line voltage may never return to Vmark and a multi-event class signature may be read incorrectly by the PSE.

*SuggestedRemedy*

Add to Parameter at line 28: "(Type 1/2)"

Add a new row below this row: "Current for Class 0 (Type 3/4)" with 1mA as the minimum, all other specs the same.

Alternately, split the Conditions column to show Type 1/2 with 0 min and Type 3/4 with 1mA min.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

Type 4 PDs never show class 0 (only 4, 2, and 3).

Add to Parameter at line 28: "(Type 1/2)"

Add a new row below this row: "Current for Class 0 (Type 3)" with 1mA as the minimum, all other specs the same.

CI 33 SC 33.2.7 P 62 L 42 # 273  
 Dwelley, David Linear Technology

Comment Type **TR** Comment Status **D** PSE Power

Table 33-11: this seems to imply that 45W over a single pairset is OK. This means all 45W PDs must use 45W transformers on each pairset

*SuggestedRemedy*

Add to Additional Information: "Class 4 and lower only"

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

This applies to middle row of item # 4 in Table 33-11:

Add to Additional Information: "Class 4 and lower only"

CI 33 SC 33.2.4.4 P 34 L 43 # 274  
 Dwelley, David Linear Technology

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

Extra "not" in true case

*SuggestedRemedy*

Change to: "do\_detection yields "valid" on both pair sets"

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment #208

EZ

CI 33 SC 33.2.7.7 P 68 L 50 # 275  
 Dwelley, David Linear Technology

Comment Type **TR** Comment Status **D** PSE Power

Move the "Power may be removed..." sentence to section 33.2.9 so it covers all cases

*SuggestedRemedy*

Move the "Power may be removed..." sentence to page 71 at the end of line 51.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

Move to 33.2.7 which is power supply output. 33.2.9 is specifically about MPS.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.2.7.7 P 70 L 26 # 276  
 Dwelley, David Linear Technology

Comment Type **TR** Comment Status **X** PSE Power

The PSE voltage on both pair sets may drop in this case: "If IPort-2P exceeds the PSE lowerbound template, the PSE output voltage on that pair set may drop below VPort\_PSE-2P min."

*SuggestedRemedy*

Remove "on that pair set" or add "or both pair sets":

"If IPort-2P exceeds the PSE lowerbound template, the PSE output voltage may drop below VPort\_PSE-2P min."

"If IPort-2P exceeds the PSE lowerbound template, the PSE output voltage on that pair set or both pair sets may drop below VPort\_PSE-2P min."

Proposed Response Response Status **W**

This should be discussed by the group.

It could penalize DS, DL PDs.

CI 33 SC 33.2.0a P 24 L 37 # 277  
 Picard, Jean Texas Instruments

Comment Type **ER** Comment Status **D** PSE Types

The column "maximum class supported" of Table 33-1a should represent the class level, and not the max power.

*SuggestedRemedy*

Replace the power (Watts) with class level (0 to 8)

Proposed Response Response Status **W**

PROPOSED ACCEPT.

EZ

CI 33 SC 33.2.0a P 24 L 47 # 278  
 Picard, Jean Texas Instruments

Comment Type **ER** Comment Status **D** PSE Types

Table 33-1a should show the maximum class supported per category, the line item "75W" should not be there.

*SuggestedRemedy*

Remove the 75W line item.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

This was a comment that was implemented incorrectly. This should not have been added.

EZ

CI 33 SC 33.2.4.4 P 34 L 43 # 279  
 Picard, Jean Texas Instruments

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

For the "true" condition, "does not" should not be there.

*SuggestedRemedy*

Replace with "do\_detection yields valid on both pair sets"

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment #208

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.4.6 P 41 L 50 # 280  
 Picard, Jean Texas Instruments

Comment Type TR Comment Status D PSE State Diagram

We also need to know if the result of do\_detection is valid for pair-set A or pair set B or both when 4P systems are used.

SuggestedRemedy

Change from: valid: The PSE has detected a PD requesting power.

To:

valid: For type 1 and Type 2 PSEs: The PSE has detected a PD requesting power.

valid\_4P\_A: For type 3 and Type 4 PSEs: The PSE has detected a PD requesting power on Alternative A pairs.

valid\_4P\_B: For type 3 and Type 4 PSEs: The PSE has detected a PD requesting power on Alternative B pairs.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 229.

Cl 33 SC 33.2.4.4 P 35 L 5 # 281  
 Picard, Jean Texas Instruments

Comment Type TR Comment Status X 4PID

there has been no determination yet that the result of detection and connection check, while both pair sets are unpowered, can confirm that a dual signature PD is able to receive power over 4 pairs.

SuggestedRemedy

change the last sentence as following, "detection, connection check and an additional 4PID method to be defined"

Proposed Response Response Status W

Based on the number of comments, there needs to be a big discussion about 4PID and how it is currently implemented.

I would like to hear the group's opinion on this comment.

Cl 33 SC 33.2.4.4 P 35 L 17 # 282  
 Picard, Jean Texas Instruments

Comment Type TR Comment Status X 4PID

It is not appropriate to simply provide power and check through LLDP if 4-pair power is permitted, as it may take a very long time to go through that cycle (including boot-up time), which may cause damage to certain types of dual signature PDs. It is also NOT reliable to rely on LLDP boot up time to avoid damaging PDs. If power is applied without having determined that 4P power can be received, a "short term" (much shorter than LLDP cycle time) time limit to turn off the power has to be defined based on potential damage scenarios, either electrically or thermally related.

SuggestedRemedy

replace 3rd sentence with "if it has not been determined that 4P power can be received, this variable shall be reset within TBD ms after the 4-pair power has been applied."

Proposed Response Response Status W

Based on the number of comments, there needs to be a big discussion about 4PID and how it is currently implemented.

I would like to hear the group's opinion on this comment.

Cl 33 SC 33.2.4.4 P 35 L 27 # 283  
 Picard, Jean Texas Instruments

Comment Type T Comment Status X 4PID

The variable and the language for deny\_dual\_sig\_4pair\_power are not required for interoperability. They appear to be implementation specific.

SuggestedRemedy

Use the results of the connection check, indicating whether a PD is a single or dual signature PD to make choices permitted by the specification. Eliminate the variable deny\_dual\_sig\_4pair\_power and associated text.

Proposed Response Response Status W

Based on the number of comments, there needs to be a big discussion about 4PID and how it is currently implemented.

I would like to hear the group's opinion on this comment.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.4.4 P 36 L 5 # 284  
 Picard, Jean Texas Instruments  
 Comment Type ER Comment Status D PSE State Diagram  
 Iport should be Iport-2P  
 SuggestedRemedy  
 Replace with Iport-2P  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 98  
 EZ

Cl 33 SC 33.2.7.7 P 69 L 48 # 285  
 Picard, Jean Texas Instruments  
 Comment Type ER Comment Status D Editorial  
 Iport needs to be converted to Iport-2P  
 SuggestedRemedy  
 Use Iport-2P instead  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.2.7.7 P 70 L 16 # 286  
 Picard, Jean Texas Instruments  
 Comment Type ER Comment Status D PSE Power  
 Iport needs to be converted to Iport-2P  
 SuggestedRemedy  
 Use Iport-2P instead  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Change "is the duration that the PI sources Iport."  
 to:  
 "is the duration that the pair set sources Iport-2p"  
 EZ

Cl 33 SC 33.2.4.4 P 39 L 36 # 287  
 Picard, Jean Texas Instruments  
 Comment Type ER Comment Status X PSE Types  
 The paragraph below is misleading, referring to "hardware limitation", in the case of type 4 PSE.  
 SuggestedRemedy  
 Replace the second sentence with:  
 "For example, this would apply to a PSE that is oversubscribed and in power management mode or a Type 3 PSE that has a hardware limitation."  
 Proposed Response Response Status W  
 This goes to the heart of what a Type 4 PSE is. I would like to hear the group's opinion on this.  
 See Comment # 99.

Cl 33 SC 33.2.4.6 P 41 L 33 # 288  
 Picard, Jean Texas Instruments  
 Comment Type ER Comment Status D PSE State Diagram  
 The expression "class of the PD associated with the" should have been removed from the sentence, based on abramson\_02\_1114.  
 SuggestedRemedy  
 Remove "class of the PD associated with the" from the sentence.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.2.5 P 50 L 46 # 289  
 Picard, Jean Texas Instruments

Comment Type **TR** Comment Status **D** PSE Detection

This sentence could be misleading and adds unnecessary text.  
 This sentence could be interpreted as not allowing a PSE to turn temporarily OFF one pair set and turn it back on without further detection, when it was previously determined to be connected to a single signature PD.

*SuggestedRemedy*

recommend removing this whole sentence as it adds unnecessary text.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 9

EZ

CI 33 SC 33.2.5.6 P 54 L 43 # 290  
 Picard, Jean Texas Instruments

Comment Type **TR** Comment Status **X** 4PID

The statement below is vague, unclear and could be misleading, it appears that a PSE can simply apply 4-pair power and then check after if the load can accept it, which is incorrect. Also, what if there is no such system information and the PSE has to decide what to do with a dual signature PD ?

In the case of dual signature PD, the other system information needed to determine 4PID can be obtained through physical layer or LLDP, for example after a first pair set has been powered and prior to powering the second pair set.

*SuggestedRemedy*

Change the first sentence as:  
 Type 3 and Type 4 PSEs shall determine whether an attached PD with classes 0 to 4 is a candidate to receive power on both pair sets prior to applying power to the second pair set.

Proposed Response Response Status **W**

Based on the number of comments, there needs to be a big discussion about 4PID and how it is currently implemented.

I would like to hear the group's opinion on this comment.

CI 33 SC 33.2.6 P 57 L 35 # 291  
 Picard, Jean Texas Instruments

Comment Type **E** Comment Status **D** PSE Classification

Type 1 PSE is incorrectly linked to classification result 0-8, while it cannot classify beyond class 4.

*SuggestedRemedy*

Replace "Classes from 0-8" with "Classes from 0-4"

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 197.

EZ

CI 33 SC 33.2.6.2 P 59 L 52 # 292  
 Picard, Jean Texas Instruments

Comment Type **ER** Comment Status **D** PSE Classification

This sentence has not been updated accordingly to the changes applied to class\_sig\_B of table 33-16a.

*SuggestedRemedy*

Replace "during CLASS\_EV4 is 1 or 2" with "during CLASS\_EV4 is 0 or 1".

Proposed Response Response Status **W**

PROPOSED ACCEPT.

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.2.7 P 62 L 26 # 293  
 Picard, Jean Texas Instruments

Comment Type TR Comment Status D PSE Power

Table 33-11:  
 VPort\_PSE\_diff is too low, it needs to be increased.

Systems using 2 separate circuitries (may be on separate cards) to drive each pair set may have issues caused by difference in GND potential, due to the ground (or power) routing if multiple pair sets on one card are at high current and all (or very few of) the pair sets on the other card have no current.

SuggestedRemedy

System analysis needed to determine appropriate value. Suggest to evaluate the impact of using 10mV instead.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 368

EZ

CI 33 SC 33.2.7 P 63 L 10 # 294  
 Picard, Jean Texas Instruments

Comment Type ER Comment Status D PSE Power

Table 33-11:  
 The max limit should be ILIM-2P

SuggestedRemedy

Replace ILIM with ILIM-2P

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This applies to item # 7 in Table 33-11

CI 33 SC 33.2.7 P 63 L 11 # 295  
 Picard, Jean Texas Instruments

Comment Type TR Comment Status D PSE Power

Table 33-11:  
 ICUT-2P min needs to be specified.  
 Should refer to ICON-2P-unb

SuggestedRemedy

Replace TBD with same values used for ICON-2P-unb

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 337.

CI 33 SC 33.2.7 P 63 L 17 # 296  
 Picard, Jean Texas Instruments

Comment Type TR Comment Status D Pres: ILIM

Table 33-11:  
 Regarding type 3, the ILIM-2P min definition is NOT right, it does not take into account the imbalance.

SuggestedRemedy

Redefine Type 3 ILIM-2P min, using the unbalance factor.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 339.

CI 33 SC 33.2.7 P 63 L 19 # 297  
 Picard, Jean Texas Instruments

Comment Type TR Comment Status D Pres: ILIM

Table 33-11:  
 ILIM-2P min needs to be defined for type 4

SuggestedRemedy

Define Type 4 ILIM-2P min starting from (1+K) x IPeak-2P, which means around 1.2A.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 337.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.2.7 P 64 L 22 # 298  
 Picard, Jean Texas Instruments  
 Comment Type E Comment Status D Editorial  
 Table 33-11:  
 Should be "single signature PD" (without an "s")  
 SuggestedRemedy  
 Remove the "s" at end of PD.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 50.  
 EZ

CI 33 SC 33.3.8 P 95 L 24 # 301  
 Picard, Jean Texas Instruments  
 Comment Type E Comment Status D Editorial  
 Table 33-19a is in the wrong section.  
 SuggestedRemedy  
 Move table 33-19a to page 95  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 This may be because it can't find on page 95 in the current draft. Editor to try to move table 33-19a to correct position.  
 EZ

CI 33 SC 33.2.7 P 64 L 25 # 299  
 Picard, Jean Texas Instruments  
 Comment Type TR Comment Status D PSE MPS  
 PSE systems need more flexibility for disconnect timing  
 SuggestedRemedy  
 Table 33-11:  
 Reduce TMPDO minimum to 320 ms for type 3 or 4  
 There is a corresponding request for PD.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 198

CI 33 SC 33.2.7.7 P 68 L 43 # 302  
 Picard, Jean Texas Instruments  
 Comment Type TR Comment Status D PSE Power  
 Each pair-set has its individual current limiting requirement (current and time), and if both of them are short-circuited, they will meet their individual spec, so that there is no need to link them together.  
 Also, the lowerbound template needs to be related to the total PI current.  
 The PSE may check the sum of currents to apply ICUT, and that would be the minimum possible.  
 SuggestedRemedy  
 Remove the paragraph with:  
 A PSE may remove power from the PI if the PI current meets or exceeds the "PSE lowerbound template" in Figure 33-14. Power shall be removed from a pair set of a PSE before the pair set current exceeds the "PSE upperbound template" in Figure 33-14.

CI 33 SC 33.3.8 P 96 L 30 # 300  
 Picard, Jean Texas Instruments  
 Comment Type TR Comment Status D PD MPS  
 PSE systems need more flexibility for disconnect timing.  
 SuggestedRemedy  
 Table 33-19a: Reduce TMPDO\_PD maximum to 300 ms if Type 3 or 4.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 199.

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 See comment # 238 for resolution.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.8 P71 L 27 # 303  
 Picard, Jean Texas Instruments

Comment Type **TR** Comment Status **X** PSE Power

The sentence does not comply with the power demotion concept defined in mutual ID section.

*SuggestedRemedy*

Replace the sentence with:  
 "At the exception of the situation when it applies power demotion, a PSE does not initiate power provision to a link if the PSE is unable to provide the maximum power level requested by the PD based on the PD's class"

Proposed Response Response Status **W**

This is handled in Type 1/2 by Type 1 PSEs treating class 4 as class 0. Should we do something similar?

Add following text to classification section:

A Type 3 or Type 4 PSE shall assign a PD the highest class it can support when a PD requests a higher class than the PSE can support. This is called power demotion.

Add text in suggested remedy as well?

Cl 33 SC 33.3.1 P74 L 39 # 304  
 Picard, Jean Texas Instruments

Comment Type **TR** Comment Status **X** 4PID

It may not be appropriate to simply provide power and check through LLDP if 4-pair power is permitted, as it may take a very long time to go through that cycle (including boot-up time), which may cause damage (ex: energy dissipated) to certain types of dual signature PDs. If there is a limit of time, it has to be short, most likely 0.5 to 1 second maximum, which is much shorter than reaction time through LLDP.

In some cases, there may be NO minimal acceptable on time at 57V when a PD does not want this power.

We cannot expect that ALL existing PDs can comply with such requirement.

*SuggestedRemedy*

Remove the second sentence from the paragraph.

Proposed Response Response Status **W**

Based on the number of comments, there needs to be a big discussion about 4PID and how it is currently implemented.

I would like to hear the group's opinion on this comment.

Cl 33 SC 33.3.2 P75 L 42 # 305  
 Picard, Jean Texas Instruments

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

There isn't any Note #3

*SuggestedRemedy*

Replace "3" with "2", both type 3 and type 4 line items.

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 156

EZ

Cl 33 SC 33.3.2 P76 L 7 # 306  
 Picard, Jean Texas Instruments

Comment Type **TR** Comment Status **D** PD Types

The paragraph is incorrect and misleading relative to type 4 PD, which apply only to class 7 and 8.

*SuggestedRemedy*

Replace the paragraph with:  
 "Type 3 PDs operating with a maximum power draw corresponding to Class 4 or greater implement both multiple-Event Physical Layer classification (see 33.3.5.2) and Data Link Layer classification (see 33.6) and advertise a class signature of 4, 5 or 6."

Also, add this one:

"Type 4 PDs operating with a maximum power draw corresponding to Class 7 or greater implement both multiple-Event Physical Layer classification (see 33.3.5.2) and Data Link Layer classification (see 33.6) and advertise a class signature of 7 or 8."

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 250.



IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.3.5.1 P 84 L 11 # 307  
 Picard, Jean Texas Instruments

Comment Type ER Comment Status D PD Classification

The paragraph is incorrect and misleading relative to type 4 PD, which apply only to class 7 and 8.

SuggestedRemedy

Replace:  
 Since 1-Event classification is a subset of Multiple-Event classification, Type 2, Type 3 and Type 4 PDs operating with a maximum power draw corresponding to class 4 or higher respond to 1-Event classification with a Class 4 signature

With:  
 Since 1-Event classification is a subset of Multiple-Event classification, Type 2 and Type 3 PDs operating with a maximum power draw corresponding to class 4 or higher, as well as Type 4 PDs, respond to 1-Event classification with a Class 4 signature

Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 33 SC 33.3.5.2 P 85 L 26 # 308  
 Picard, Jean Texas Instruments

Comment Type E Comment Status D Editorial

These 2 lines should have immediately followed the last paragraph of previous page, otherwise it can become confusing.

SuggestedRemedy

Regroup this paragraph together on either page 84 or 85.

It should read as:

"Until successful Multiple-Event Physical Layer classification or Data Link Layer classification has completed, a Type 2, Type 3 and Type 4 PD's pse\_power\_leveltype state variable is set to '1.' A Type 2, Type 3 and Type 4 PD shall conform to the electrical requirements as defined by Table 33-18 for the level type defined in the pse\_power\_leveltype state variable."

Proposed Response Response Status W  
 PROPOSED ACCEPT.

EZ

CI 33 SC 33.3.7 P 87 L 28 # 309  
 Picard, Jean Texas Instruments

Comment Type T Comment Status D Table 33-18

Table 33-18:  
 table looks too complicated, too many unnecessary choices.

SuggestedRemedy

simplify the table and regroup around a more limited number of alternatives.

Proposed Response Response Status W  
 PROPOSED REJECT.

I need a specific suggested remedy.

CI 33 SC 33.3.8 P 96 L 6 # 310  
 Picard, Jean Texas Instruments

Comment Type E Comment Status D Editorial

Table 33-19a:  
 At 2 locations, the bullet should be moved to the left

SuggestedRemedy

Position correctly the bullets

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

For Table 33-19a, Item 1:

Move the bullets ("-") from end of the first row to the beginning of the second row as it is meant to call out the power requirement.

Each "conditions" cell for item 1 should have a bulleted list inside it.

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.3.7.4 P 91 L 37 # 311  
 Picard, Jean Texas Instruments

Comment Type **TR** Comment Status **D** PD Power  
 Equation 33-12a should apply only to class 7-8

*SuggestedRemedy*

Replace:  
 Peak power, PPeak\_PD, for Class 7 and 8 is based on  
 Equation (33-12a), which approximates the ratiometric peak powers of Class 0 through  
 Class 8.

With:  
 Peak power, PPeak\_PD, for Class 7 and 8 is based on  
 Equation (33-12a), which approximates the ratiometric peak powers of Class 7 through  
 Class 8.

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

OBE by comment # 359  
 EZ

CI 33 SC 33.2.4.7 P 45 L 1 # 312  
 Picard, Jean Texas Instruments

Comment Type **TR** Comment Status **D** PSE State Diagram  
 the state diagram does not cover Type 3 and Type 4 PSEs and that a replacement is  
 required before I will review it.

*SuggestedRemedy*

New Type 3-4 state diagram to be provided.

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

The PSE State diagram will be left open for comment in the next comment cycle.  
 See comment # 225.  
 Accepting this comment results in no changes to the text.

CI 33 SC 33.2.7.7 P 69 L 1 # 313  
 Picard, Jean Texas Instruments

Comment Type **TR** Comment Status **X** Pres: Type 4 Power  
 A Type 4 version of figure 33-14 will be needed. There are fundamental differences  
 between type 3 and type 4 Power on state behavior.

*SuggestedRemedy*

Figure 33-14a to be proposed.

Proposed Response Response Status **W**  
 Waiting for Yair's Presentation.

CI 33 SC 33.2.6.2 P 61 L 13 # 314  
 Darshan, Yair Microsemi

Comment Type **E** Comment Status **D** Editorial  
 Table 33-10 item 8, additional information column.  
 Missing word "which" in the following text.  
 "The maximum value of TME2 is limited by the maximum allowed time from end of  
 detection until power-on ----which---- is limited by 33.2.7.12.

*SuggestedRemedy*

Change the additional information text from:  
 "The maximum value of TME2 is limited by the maximum allowed time from end of  
 detection until power-on is limited by 33.2.7.12.

To:  
 "The maximum value of TME2 is limited by the maximum allowed time from end of  
 detection until power-on which is limited by 33.2.7.12.

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

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.1.4 P 21 L 50 # 315  
 Darshan, Yair Microsemi

Comment Type TR Comment Status D Power System

The Title of clause 33.1.4 was in the past "Type 1 and Type 2 system parameters" and was changed to System parameters".  
 This change and the modification in line 54 address types 3 and 4 too.

The problem is that in the current standard (IEEE802.3-2012) the text in line 50 that says: "A power system, consists of a single PSE..." that was correct for Type 1 and Type 2 PSEs, is not correct for Type 3 and 4 PSEs.  
 Single PSE was OK for Type 1 or 2 due to the fact that we could use ALT A PSE or ALT B PSE but not both so a "single PSE" term was correct to use.  
 In Type 3 or 4 PSEs, the term single PSE is confusing term due to the fact that Type 3 and 4 PSEs can use a PSE that uses ALT A and ALT B PSEs or use a PSE with two outputs connected to ALT A and ALT B pair-sets or using any other PSE implementations that do the work.

The point is that it is not just a single PSE with one output connected to two pair-sets. It is more like a single PSE system etc.

SuggestedRemedy

Replace "single PSE" by "single PSE system"

Proposed Response Response Status W

PROPOSED REJECT.

The PSE is defined as: A DTE or midspan device that provides the power to a single link section. DTE powering is intended to provide a single 10BASE-T, 100BASE-TX, or 1000BASE-T device with a unified interface for both the data it requires and the power to process these data.

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

The PSE specs are defined at the PI and thus the PSE is a black box and still a "single PSE".

Cl 33 SC 33.1.4.1 P 23 L 22 # 316  
 Darshan, Yair Microsemi

Comment Type E Comment Status D

Editor note: Lines 22-27  
 Type 4 requirements is defined. The rest will be defined in TIA TSB-184-A.  
 As a result we can delete the Editor note.

SuggestedRemedy

Delete the editor note in lines 22-27, page 23.

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

Cl 33 SC Annex 33A P 145 L 9 # 317  
 Darshan, Yair Microsemi

Comment Type E Comment Status D Editorial

Text says:  
 "Insert 33A.3 and 33A.4 after 33A.2 as follows:"  
 Where is 33A.2 in Draft 1.0?  
 Where is the text of PSE-PD stability?

SuggestedRemedy

Where is 33A.2 in Draft 1.0?  
 To restore "33A.2 PSE-PD stability" text as 33A.2.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

I believe the existing annex is there just not shown. Editor to confirm.

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33A.4 P 145 L 34 # 318  
 Darshan, Yair Microsemi  
 Comment Type **TR** Comment Status **D** Editorial  
 Typo: Need to be Equation 33a-2 and not Equation 33a-1.  
*SuggestedRemedy*  
 Change from Equation 33a-1 TO Equation 33a-2.  
*Proposed Response* Response Status **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 91.  
 EZ

Cl 33 SC 33A.4 P 145 L 37 # 319  
 Darshan, Yair Microsemi  
 Comment Type **ER** Comment Status **D** Editorial  
 There is a typo in equation 33a-2 and Equation 33a-3:  
 Equations use Rch\\_max and Rch\\_min instead Rch\_max and Rch\_min  
 remove the "\" from Rch\_max and Rch\_min (6 locations)  
*SuggestedRemedy*  
 remove the "\" from Rch\_max and Rch\_min in equations 33a-2 and 33a-3 (6 locations) in  
 lines 37 and 45.  
*Proposed Response* Response Status **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 90.  
 EZ

Cl 33 SC 33.2.4.4 P 34 L 42 # 320  
 Darshan, Yair Microsemi  
 Comment Type **TR** Comment Status **D** Editorial  
 Variable both\_alts\_valid:  
 The text:  
 "Values:False:do\_detection does not yields "valid" on both pair sets.  
 True: do\_detection does not yield "valid" on both pair sets."  
 was not correctly inserted per approved baseline text.  
 (There are other comments related to same problem. Base line text probably copied  
 wrongly or copied from not th elast version).  
*SuggestedRemedy*  
 Replace with:  
 TRUE – do\_detection yields "valid" on both pair-sets  
 FALSE – do\_detection does not yield "valid" on both pair-sets  
*Proposed Response* Response Status **W**  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment #208  
 EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.4.4 P 35 L 6 # 321  
 Darshan, Yair Microsemi

Comment Type **TR** Comment Status **D** 4PID

In the following variable:  
 PD\_4pair\_candidate  
 This variable is provided for Type 3 and Type 4 PSEs to determine whether a connection is a candidate to receive power on both pair sets.

the phrase "a connection" is not clear.  
 The variable PD\_4pair\_candidateIt is to determine if a class 0-4 PD can recived and work with 4P power.

The text "a connection" can be "a PD" or "a device" or "a PD class 0-4".

*SuggestedRemedy*

Replace "a connection" with "a PD class 0-4"

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

Need to see associated state diagram and where/how this variable is used.

See comment # 225.

No changes to the text are required at this time.

Cl 33 SC 33 P 0 L 0 # 322  
 Darshan, Yair Microsemi

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

I couldnt find in the text that all requirements are relevant to a single port and it is implementation specifics to adress the operation of multi-port systems as regard to clause 33.

*SuggestedRemedy*

Add a text that syas:  
 Clause 33 defines the Type 1,2,3 and 4 systems requirements for a single port system.  
 Multi-port systems requirements are implementation specific.

(or equivalen wording)

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

Add text:

"This clause defines the requirements for a single power system. Multi-port power system requirements are implementation specific."

To end of 33.1

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.2.4.4 P 35 L 9 # 323  
 Darshan, Yair Microsemi

Comment Type **TR** Comment Status **X** 4PID

There is no reason why PD\_4pair\_candidate results will be ready only before classification. It can be ready at any time prior power\_up.

*SuggestedRemedy*  
 Change lines 9-10 from:  
 Values:  
 False: Do not proceed to 4 pair classification.  
 True: Proceed to 4 pair classification.

To:  
 Values:  
 False: This PD is not a candidate for powering up with power on both pair sets.  
 True: This PD is a candidate for for powering up with power on both pair sets.

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

Need to see associated state diagram and where/how this variable is used.

See comment # 225.

No changes to the text are required at this time.

CI 33 SC 33.2.4.4 P 37 L 9 # 324  
 Darshan, Yair Microsemi

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

At the system level we need to know if we have over load condition over a pair set, for both pair-sets.  
 As a result, the variable ovld\_detected text need to be updated.

*SuggestedRemedy*  
 Change from:  
 A variable indicating if the PSE output current has been in an overload condition (see 33.2.7.6) for..."

To:  
 A variable indicating if the PSE output current over a pair-set has been in an overload condition (see 33.2.7.6) for..."

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

CI 33 SC 33.2.4.6 P 41 L 50 # 325  
 Darshan, Yair Microsemi

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

In the system level we need to know if the result of do\_detection is valid for pair-set A or pair set or both when 4P systems are used. Last time we covered the case where both pair sets result with valid signature.  
 We need also to know if it is valid on ALT A only or valid on ALT B only.

*SuggestedRemedy*  
 Change from:  
 valid: The PSE has detected a PD requesting power.  
 To:  
 valid: For Type 1 and Type 2 PSEs: The PSE has detected a PD requesting power.  
 valid\_4P\_A: For Type 3 and Type 4 PSEs: The PSE has detected a PD requesting power on Mode A  
 valid\_4P\_B: For Type 3 and Type 4 PSEs: The PSE has detected a PD requesting power on Mode B.

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

OBE by comment # 229.

CI 33 SC 33.2.0A P 24 L 31 # 326  
 Darshan, Yair Microsemi

Comment Type **ER** Comment Status **D** PSE Types

It is clear from different locations in our standard that PSE that implements DLLL is also allowed to implement the maximum class events that corresponds to the maximum PSE power supported per its type and class.  
 It will be helpful to add such note right after Table 33-1a that summarize the permissible PSE types.

*SuggestedRemedy*  
 Add note 5 after note 4 below table 33-1a that says:  
 5-PSE that is defined as DLLL capable and implements the maximum class events corresponds to the PSE maximum power supported is allowed according to this standard.

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

This is already contained in the table by use of the work "optional" in the DLL column.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.4.7 P 44 L 54 # 327  
 Darshan, Yair Microsemi

Comment Type TR Comment Status D PSE State Diagram

The title of figure 33-9 on page 44 is incorrect.  
 It says:  
 "Figure 33-9—Type 1 and Type 2 PSE state diagram (continued)"  
 The drawing shows the PSE classification state diagram of of Type 1, 2, 3 and 4.

*SuggestedRemedy*

Change the title figure 33-9 on page 44 from "  
 "Figure 33-9—Type 1 and Type 2 PSE state diagram (continued)"  
 To  
 "Figure 33-9 —Type 1, Type 2, Type 3 and Type 4 PSE classification state diagram  
 (continued)"

Proposed Response Response Status W

PROPOSED REJECT.

This is OBE by comment # 188 and comment # 231

EZ

Cl 33 SC 33.3.7.3 P 90 L 28 # 328  
 Darshan, Yair Microsemi

Comment Type TR Comment Status D PD Inrush

The comment addresses the following text in lines 28-40 but focused on lines 28-31):  
 33.3.7.3 Input inrush current  
 Inrush current per pair-set is drawn beginning with the application of input voltage at the pair set compliant with Vport\_PD-2P requirements as defined in Table 33-18, and ending before TInrush-2P min per Table 33-11. After TInrush-2P min, the PD shall not exceed its per pair set current threshold corresponding to its class level.

-----  
 From the current text, it is not clear that linrush is the response of applying voltage to a capacitor. After PD input capacitance is charged, the capacitor current is decaying to zero. It is also not clear that it is possible that during POWER UP, the input current to the PD contain a resistive load component that is limited for all PD types to 350mA during POWER UP time frame

For Type2,3 and 4 PDs it is limited to 350mA for at least 80msec from STARTUP begin. As a result the PD input current is split to the PD resistive load and PD input capacitor, generating a charging current of:  $I_{charging} = I_{inrush-2P\_min} - Type\ 1\ maximum\ DC\ current = 0.4A - 0.35A = 50mA$  which guarantees that maximum PD input capacitor=180uF is fully charged within 50.4msec for Type 1 systems and Type 1 maximum allowed DC load.  $T_{inrush} = C_{pd\_max} * (V_{pse\_min} - V_{off}) / (I_{inrush\_min} - I_{port\_cont}) = 180uF * (44V - 30V) / (0.4A - 0.35A) = 50.4msec$ . This is the reason why Tinrush max for the PD is 50msec.

In similar way for Type 2:  $T_{inrush} = 180uF * (50V - 30V) / (0.4A - 15.4W/50V) = 180uF * 20V / (0.4A - 0.308A) = 39.13msec < 50msec$  which is OK.

As a result, linrush is observed almost immediately when PSE applies Voltage to PD (within few msec) and PD resistive load may follow it at any time during POWER UP time frame with maximum value of 350mA.

There are 2-3 main PD POWER UP profiles (1. short load, ramp, stable. 2. Flat, ramp, stable. 3. Vport, short load, ramp, stable). In all of them completion of linrush is possible to detect without waiting for the completion of Tinrush timer.

*SuggestedRemedy*

Add the following text after line 31:  
 Successful POWER UP is guaranteed by PSE supplying Inrush-2P minimum value and PD not drawing more than Type 1 maximum DC current which result with stable voltage ramping across PD input capacitor. See details in Annex A\_PD\_Inrush.

-----  
 (Annex A\_PD\_Inrush is included in darshan\_08\_0615.pdf)

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Nothing here is normative. I suggest all of this be added to a new informative annex (Annex A\_PD\_Inrush as you call it).

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.3.5.2 P 85 L 27 # 329  
 Darshan, Yair Microsemi

Comment Type TR Comment Status X Pres: Dual Class

The following is a simple proposal that doesn't add new requirements for PSE and PD and addresses classification requirements when dual signature PD is connected to Type 3 and 4 PSE.

1. No need to distinguish between Dual Signature Single Load and Dual Signature Dual load. Result with simple specification.
2. Efficient L1 power management
3. Dual signature PD (single load or dual load, doesn't matter) will use only classes 0 to 5 over each pair-set. The PD specifies the amount of power required over each pair set by using the relevant class code (from the exiting list) over each pair set. Valid class codes are 0 to 5. (5+5 = 90W, 4+4 = 60W, 4+3 = 45W and so on...).
4. A Dual Signature, single load PD is allowed to show different class codes. If it does so, it will likely violate the current limit of one of its pair sets and get disconnected.
5. PSEs that don't want to deal with different class codes can take the larger class of the two pair sets and apply that power to both.
6. PSEs that don't want to deal with dual load PDs can opt not to power them.

See darshan\_05\_0615.pdf for detailed discussion and remedy.

*SuggestedRemedy*

- 1) Add the following text in the classification section in page 85 after line 27 before table 33-17:

Dual Signature Single Load PDs and Dual Signature Dual Load PDs shall use only class 0 to 5 power level over each pair set.  
 The class code advertised over each pair set is the total power requested by the PD over that pair set (The PSE will deliver to the total class power over each pair set to the PD) determine the total power that will deliver to the PD).  
 Dual Signature PDs may use different class signature per pair set.

Proposed Response Response Status W

Waiting for Yair's Presentation.

CI 33 SC 33.2.6.2 P 59 L 53 # 330  
 Darshan, Yair Microsemi

Comment Type TR Comment Status X Pres: Dual Class

It is not clear how PSE issues the classification events in case of Single or Dual signature.

SS PD: Classification events may apply on one of the pair-sets or on both pair sets at the same time or some of the events on first pair set and then the remaining class events on the 2nd pair-set as long as the PD receives the correct total number of class events.

DS PD: Classification events need to be applied to each pair set. Application of the events can be applied at the same time to both pair sets or in non-overlapping way.

*SuggestedRemedy*

To add the following text after the end of clause 33.2.6.2:

To add the following text at the classification section at clause TBD after line TBD:

SS PD: Classification events may apply on one of the pair-sets or on both pair sets at the same time or some of the events on first pair set and then the remaining class events on the 2nd pair-set as long as the PD receives the correct total number of class events.

DS PD: Classification events need to be applied to each pair set. Application of the events can be applied at the same time to both pair sets or in non-overlapping way.

Proposed Response Response Status W

Waiting for Yair's Presentation.

CI 33 SC 33.2.4.7 P 51 L 7 # 331  
 Darshan, Yair Microsemi

Comment Type TR Comment Status D PSE Detection

we didnt approved this text.  
 We agreed that this text in the 4P-ID baseline text is redundant.  
 (The editor note regarding clarifying Type 3 and Type 4 requirements in the detection section is not required.  
 We agree on it during the discussion on 4P-ID base line text and also remove the text that tried to do this clarification and we agreed that it is redundant and not belong to 4P-ID.)

*SuggestedRemedy*

Remove the editor note text.

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ



IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.2.5 P 50 L 47 # 332  
 Darshan, Yair Microsemi

Comment Type TR Comment Status D PSE Detection

The text:

"Specifically, Type 3 and Type 4 PSEs shall apply the detection probe to both pair sets prior to applying power to 4 pairs".

Was not approved to be added to the draft.

*SuggestedRemedy*

1. Delete this text.
2. Please verify that approved last presentation versions are used to for its baseline text.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 9

EZ

CI 33 SC 33.2.47 P 50 L 30 # 333  
 Darshan, Yair Microsemi

Comment Type ER Comment Status D 4PID

Missing parenthesis in the logical equation.

*SuggestedRemedy*

Change "pd\_4pair\_candidate = (both\_alts\_valid)\*[PD\_signature = Single + (PD\_signature= Dual) \* (!deny\_dual\_sig\_4p\_power)].

To:

Change "pd\_4pair\_candidate = (both\_alts\_valid)\*[(PD\_signature = Single) + (PD\_signature= Dual) \* (!deny\_dual\_sig\_4p\_power)].

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

CI 33 SC 33.3.7.3 P 90 L 53 # 334  
 Darshan, Yair Microsemi

Comment Type TR Comment Status D PD Inrush

We don't want to wait 50- 75msec in Type 3 and 4 systems for linrush to be ended if not required due to measuring PD voltage/current/time profile by the PSE and knowing that it was ended earlier.

In some large mutiport systems time for all ports to be ON is affected by Tinrush\*N. N number of ports and PSE power supply power capability and its response to dynamic load behavior.

*SuggestedRemedy*

To add Editor Note at the end of 33.3.7.3.

To address the following issues:

1. Shortening Tinrush if PSE has the knowledge that PD is done with its Inrush.
2. Fastening Tinrush by allowing higher linrush\_max during Tinrush time frame to shorten Tinrush with big PD capacitors.

Proposed Response Response Status W

PROPOSED REJECT.

This is a brand new topic that has a large technical impact on the standard. Please give a presentation on such material if you would like it to be included in the standard.

CI 33 SC 33.2.5.6 P 54 L 46 # 335  
 Darshan, Yair Microsemi

Comment Type T Comment Status D 4PID

Reference to 33.2.5.0 is placed in the wrong place.

33.2.5.0. is the palce where connection check is metioned bit not for other system information

*SuggestedRemedy*

Replace:

"...the result of connection check and the results of other system information, as described in 33.2.5.0."

With:

"...the result of connection check as described in 33.2.5.0 and the results of other system information."

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.1.4 P 22 L 38 # 336  
 Darshan, Yair Microsemi

Comment Type E Comment Status D Unbalance

I am still in the research of the effect of extended power on Icont-2P\_unb for Type 4 and it looks that we will have to make a specification design so the maximum current including P2P\_Effect will gurantee that Icont-2P\_unb=Icut\_min-2P will be <=1A.

SuggestedRemedy

Add to the Editor Note after the the text (line 38)"  
 Type 4: Icont-2p=865mA, Icont-2p\_unb=1087mA")

The following text:

Type 4 Icont-2P\_unb will have to be lower than 1087mA e.g. <=1A in order to reduce stress on transformers due to impact later on Ipeak, ILIM\_MIN etc.

The plan is to do it by requaring more tight P2P\_lunb at high current from a PD that wants to use extended power. Technically it is feasible.

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

Cl 33 SC 33.2.7 P 63 L 11 # 337  
 Darshan, Yair Microsemi

Comment Type T Comment Status D PSE Power

Table 33-11 item 7, Icut-2P for type 3,4: To replace TBD with expression.

At worst case P2P\_lunb conditions:

Icut\_min-2P=Icont-2P\_unb=  
 (Icont-2P\_unb\_max/Icont-2P\_max)\*0.5\*Pclass/Vport\_PSE-2P=  
 (0.668/0.6)\*0.5\*Pclass/Vport\_PSE-2P=0.556\*Pclass/Vport\_PSE-2P for Type 3 PSE.

In similar way for Type 4:

Icont-2P\_unb=(0.931/0.865)\*0.5\*Pclass/Vport\_PSE-2P=1.076\*0.5\*Pclass/Vport\_PSE-2P.  
 Icont-2P\_unb=0.538\*Pclass/Vport\_PSE-2P

SuggestedRemedy

1. Split Icut-2P for two lines for Type 3 and Type 4 (see attached darshan\_06\_0615.pdf for details).
2. Replace TBD with:  
 Icut-2P\_min=0.556\*Pclass/Vport\_PSE-2P for Type 3 PSE  
 Icut-2P\_min=0.538\*Pclass/Vport\_PSE-2P for Type 4 PSE

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 33 SC 33.2.7 P 63 L 24 # 338  
 Darshan, Yair Microsemi

Comment Type T Comment Status D PSE Power

Table 33-11 item 10, TLIM-2P for type 4:

We can replace the TBD with a shorter number than 10sec in order to keep the same energy content used in Type 3 in order to keep the same stress over the current limiter.

Type 3 worst case energy on current limiter over a pair set: 30W\*10msec=0.3Joule

Type 4 worst case energy on current limiter over a pair set: 50W\*TLIM-2P=0.3Joule.

TLIM-2P=0.3/50=6msec max.

Design margin=2msec.

TLIM-2P=4msec.

SuggestedRemedy

TLIM-2P minimum=0.004 for Type 4

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

There must have been margin already in the Type 3 number (directly based off Type 2), so we do not need to add more margin.

For Table 33-11, item 10:

TLIM-2P minimum=0.006 for Type 4

Cl 33 SC 33.2.7 P 63 L 17 # 339  
 Darshan, Yair Microsemi

Comment Type T Comment Status D Pres: ILIM

Table 33-11 item 9, ILIM-2P for type 3,4: To replace TBD with numbers per the the calculations shown in Darshan\_06\_0615.pdf.

Short summary:

ILIM-2P\_MIN>=Ipeak-2P\_max per figure 33-14.

Ipeak\_max for Type 3 and 4 can be found by equation 33-4 at worst case conditions of K, Ppeak\_PD-2P per equation 33-12 and 33-12a and Table 33-18 item

SuggestedRemedy

See darshan\_06\_0615.pdf for updated Table 33-11 item 9.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Waiting for Presentation.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.2.7 P 64 L 11 # 340  
 Darshan, Yair Microsemi

Comment Type TR Comment Status D Editorial

Table 33-11 item 17 in the additional information column lin 11-12:  
 Two erros:  
 1. ">=" and not ">=">  
 2. Pclass(5) and not Pclass(4)  
 Per the approved base line text, Pclass>= Pclass(5) power  
 and not Pclass > Pclass(4)

SuggestedRemedy

Change to Pclass>= Pclass(5).

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

CI 33 SC 33.2.7 P 64 L 7 # 341  
 Darshan, Yair Microsemi

Comment Type TR Comment Status D Editorial

Table 33-11 item 17, 17a, 17b. In the additional information column:  
 Add: "see 33.2.9.1.2"  
 It is missing also for all PSE types in all the rows of item 17, 17a and 17b.  
 Total 6 places.

SuggestedRemedy

Add to the additional information column for each row of items items 17, 17a, 17 ( 6  
 places) : "See 33.2.9.1.2"

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

CI 33 SC 33.2.7 P 64 L 38 # 342  
 Darshan, Yair Microsemi

Comment Type TR Comment Status D PSE Detection

Table 33-11 item 22, Cout.  
 Cout is correct over a pair-set for type 3 and 4 as well.

SuggestedRemedy

Change parameter name to:  
 "Output capacitance during detection state over a pair set"  
 Change PSE Type to 1,2,3,4.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 33 SC 33.2.7.7 P 68 L 48 # 343  
 Darshan, Yair Microsemi

Comment Type E Comment Status D Editorial

Typo. fromany is from any

SuggestedRemedy

Change to "from any"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 148

EZ

CI 33 SC 33.2.7.4 P 66 L 25 # 344  
 Darshan, Yair Microsemi

Comment Type E Comment Status D Editorial

Remove Editor note regarding K. It is no longer required after the the updates for K are  
 done.

SuggestedRemedy

Remove Editor not eregarding K.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Remove Editors note that begins with "In the above equation..." on line 25 of page 66.

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.7.4a P 66 L 50 # 345  
 Darshan, Yair Microsemi  
 Comment Type T Comment Status D PSE Unbalance  
 Update the constant from 0.040 to 0.042 per latest review.  
 Remove editor note from page 67 line 6. (Work is done.)  
 SuggestedRemedy  
 1. Page 66 line 50 in equation 33-4a:  
 Update the constant from 0.040 to 0.042.  
 2. Page 67 line 6: Remove the editor note.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 33 SC 33.2.7.5 P 67 L 36 # 346  
 Darshan, Yair Microsemi  
 Comment Type TR Comment Status D PSE Power  
 It is usefull to allow higher Inrush current than 450mA after TBD time from POWER UP start for the following reasons:  
 a)Reducing dynamic stress on the MOSFET during POWER UP and  
 b)Reach faster startup with lower probability for startup oscilations  
 c) Handle different load behaviour during startup that is time dependent.  
 SuggestedRemedy  
 Add the following text after line 36.  
 The maximum inrush current sourced by the PSE per pair set may exceed the per pair set PSE inrush template in Figure 33-13 only TBD msec after POWER UP has started and shall not exceedd ILIM-2P maximum as specified by Table 33-11 item 9.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 Allowing higher current based on time is a brand new topic. Please create a presentation and build consensus for this idea.

Cl 33 SC 33.2.7 P 64 L 12 # 347  
 Darshan, Yair Microsemi  
 Comment Type E Comment Status D PSE MPS  
 Table 33-11 item 17, additional information column, line 12  
 The text: "The pair set with highest current" is not clear since we are looking at two pairs of the same polarity and we care of the pair with the highest current and not the pair-set with the highest current.  
 SuggestedRemedy  
 Change to "The pair with highest current"  
 Proposed Response Response Status W  
 PROPOSED REJECT.

All of the specifications are per pair set. Here, we are requiring that the PSE look at the pair set with the highest current, even if the PSE is only looking at one of the pairs.

Cl 33 SC 33.3.2 P 76 L 11 # 348  
 Darshan, Yair Microsemi  
 Comment Type TR Comment Status D PD Power  
 The text:  
 "The maximum power a PD expects to draw from a PSE is PClass\_PD max as defined in Table 33-18." was removed and should be restored. Without it we will have interoperability issues as discussed in 802.3at.  
 SuggestedRemedy  
 Restore the text "The maximum power a PD expects to draw from a PSE is PClass\_PD max as defined in Table 33-18."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Add text:  
 "For All PDs other than class 6 and 8, the maximum power a PD expects to draw from a PSE is Pclass\_PD max as defined in Table 33-18."  
 to the beginning of section 33.3.7.2

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.3.7 P 89 L 16 # 349  
 Darshan, Yair Microsemi  
 Comment Type TR Comment Status D Table 33-18  
 Table 33-18 item 11 Von: It is 42V for Type 3 as well.  
 It may be 42V for Type 4 as well.  
 SuggestedRemedy  
 Change PD Type to 1,2,3 and 4.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 115.

Cl 33 SC 33.3.7 P 88 L 49 # 350  
 Darshan, Yair Microsemi  
 Comment Type TR Comment Status X Pres: Table 33-18  
 Table 33-18 item 9 Cport-2P minimum value.  
 Cport-2P need to be defined for Type 3 and 4.  
 In addition, it should be defined for Single signature PD and Dual signature PD.  
 SuggestedRemedy  
 (Update table 33-11 item 9 per the following (See table formate and details in darshan\_08\_0615.pdf)  
 1. Change PSE type from 1,2 to 1,2,3.  
 2. Add to the additional information of type 1,2,3 the following:  
 For Type 3 dual signatures PD.  
 For Type 3 single signature PD during 4P operation, the total minimum PD input capacitance is 10uF when Mode A and Mode B pairs are tied together.  
 3. Change PSE type from 3,4 to 4.  
 2. Add to the additional information of type 4 the following:  
 See 33.3.7.6, 33.3.7.3.  
 For Type 4 dual signatures PD.  
 For Type 4 single signature PD during 4P operation, the total minimum PD input capacitance is 10uF when Mode A and Mode B pairs are tied together.

Proposed Response Response Status W  
 Waiting for Presentation from Yair.

Cl 33 SC 33.2.3 P 32 L 6 # 351  
 Darshan, Yair Microsemi  
 Comment Type E Comment Status D Editorial  
 Missing coma in "...with a pair each carry.."  
 SuggestedRemedy  
 Change to "...with a pair, each carry.."  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 No comma is needed.  
 EZ

Cl 33 SC 33.2.6.2 P 60 L 22 # 352  
 Darshan, Yair Microsemi  
 Comment Type T Comment Status D PSE Classification  
 Table 33-9, missing the case lclass>51.0mA.  
 SuggestedRemedy  
 Add new row to table 33-9 and insert the following.  
 Measure lclass column: >51.0mA  
 Classification column: Invalid class.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 This limit is covered in the lclass\_lim value in Table 33-10 and is refered to in the text.

Cl 33 SC 33.2.6.2 P 61 L 16 # 353  
 Darshan, Yair Microsemi  
 Comment Type E Comment Status D Editorial  
 Table 33-10 items 9, 10. Add reference "see 33.2.6.2" in the additional information column.  
 It eases the reading.  
 SuggestedRemedy  
 Add reference "see 33.2.6.2" in the additional information columns for items 9 and 10.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.4.4 P 35 L 19 # 354  
 Darshan, Yair Microsemi

Comment Type TR Comment Status D 4PID

The maintain\_4pair\_power signature current text blocks us to implement more reliable 4P-ID mechanisms.

The text says:  
 "It is initially set to the value of pd\_4pair\_candidate"

The "is" should be replaced with "may"

*SuggestedRemedy*

Replace:  
 "It is initially set to the value of pd\_4pair\_candidate"

To:  
 "It may initially set to the value of pd\_4pair\_candidate"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Replace:  
 "It is initially set to the value of pd\_4pair\_candidate"

To:  
 "It may initially be set to the value of pd\_4pair\_candidate"

Cl 33 SC 33.1.4 P 22 L 25 # 355  
 Darshan, Yair Microsemi

Comment Type E Comment Status D Unbalance

Last row for Type 4:  
 Missing footnote to the pair current 0.96 (note 2). (Same note as for Type 3)  
 To change from 0.96 to 0.96 (note 2)

*SuggestedRemedy*

To change from 0.96 to 0.96(note 2)

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment #134.

EZ

Cl 33 SC 33.2.0a P 24 L 53 # 356  
 Darshan, Yair Microsemi

Comment Type E Comment Status D PSE Types

Page 24 line 53, note 3 below table 33-1a.  
 It is not clear to the reader in note 3 where we he can find the exact differences between 1 event Type 3 classification and 1 event Type 1 classification.

*SuggestedRemedy*

Change "Table 10" in note 3  
 to  
 "Table 10 items 11 and 12"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change "Table 33-10" to "Table 33-10 items 11 and 12"

EZ

Cl 33 SC 33.2.0a P 24 L 53 # 357  
 Darshan, Yair Microsemi

Comment Type T Comment Status D Editorial

In note 3 we have reference to section 33.6.2. It looks like error.  
 It should be 33.2.6 or 33.2.6.1 etc.

*SuggestedRemedy*

Update the reference to the correct one.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Replace 33.6.2 with 33.2.6.1

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.3.7 P 89 L 20 # 358  
 Darshan, Yair Microsemi

Comment Type TR Comment Status D Table 33-18

Table 33-18 item 11 Voff: It is 30V for Type 3 as well.  
 It may be 30V for Type 4 as well.

*SuggestedRemedy*

Change PD Type to 1,2,3 and 4 for Voff.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 115.

Cl 33 SC 33.3.7.4 P 91 L 35 # 359  
 Darshan, Yair Microsemi

Comment Type TR Comment Status D PD Power

1. The base line approved on May was not copied correctly to Draft D1.0. See approved baseline page 3 at [http://www.ieee802.org/3/bt/public/may15/darshan\\_03\\_0515\\_REV008.pdf](http://www.ieee802.org/3/bt/public/may15/darshan_03_0515_REV008.pdf)
2. In addition the construction of it was a bit not clear.

*SuggestedRemedy*

Replace line 35-40 with:  
 "Peak power, Ppeak\_PD, for Class 4, 5 and 6 is based on Equation (33-12).  
 Peak power, Ppeak\_PD, for Class 7 and 8 is based on Equation (33-12a).  
 Equation (33-12) and equation (33-12a) are used to approximate the ratiometric peak powers of Class 0 through Class 8. These equations may be used to calculate peak operating power for Ppeak\_PD values obtained via Data Link Layer classification or Auto class."  
 -----

There is an other comment that make changes to the above text.  
 The comments were separated deliberately due to the fact that the 2nd comment on this text is a result of new work that needs to be approved at the meeting.

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

Cl 33 SC 33.3.7.9 P 94 L 32 # 360  
 Darshan, Yair Microsemi

Comment Type TR Comment Status D Pres: PD Unbalance

We need to add new subclause 33.3.7.10 after 33.3.7.9 for PD PI Pair to Pair resistance and current unbalance.

In Table 33-11 item 4a, Icont-2P\_unb we defined the maximum pair set current with the effect of E2EP2P\_lunb/Runb.

This current is also a limit for the PD due to the fact that it is the same current. As a result, a PD vendor will have to design his PD to not exceed under the test setup conditions specified in the proposed 33.3.7.10.

*SuggestedRemedy*

1. Add new clause with the following content:  
 33.3.7.10 PD PI Pair to Pair resistance and current unbalance.  
 Type 3 and Type 4 PDs shall not exceed Icont-2Punb as specified in Table 33-11 item 4a when tested with the test setup specified in 33.3.7.10.1.
- 2 Add new clause 33.3.7.10.1: Test setup and test conditions for PD PI pair to pair resistance and current unbalance.  
 Insert the content of PD PI baseline text proposal in darshan\_01\_0615.pdf to 33.3.7.10.1.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Waiting for presentation.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.3.7.6 P 93 L 28 # 361  
 Darshan, Yair Microsemi

Comment Type E Comment Status D PD Power

Lines 22-25 say:  
 Type 1 PD input current shall not exceed the PD upperbound template (see Figure 33–18) after TLIM min (see Table 33–11 for a Type 1 PSE) when the following input voltage is applied. A current limited voltage source is applied to the PI through a RCh resistance (see Table 33–1). The current limit meets Equation (33–14) and the voltage ramps from VPort\_PSE min to VPort\_PSE max at 2250 V/s.

Sentence construction makes it unclear.  
 The "the following input voltage is applied." can be removed.

*SuggestedRemedy*

Change to:  
 Type 1 PD input current shall not exceed the PD upperbound template (see Figure 33–18) after TLIM min (see Table 33–11 for a Type 1 PSE) when a current limited voltage source is applied to the PI through a RCh resistance (see Table 33–1). The current limit meets Equation (33–14) and the voltage ramps from VPort\_PSE min to VPort\_PSE max at 2250 V/s.

Proposed Response Response Status W

PROPOSED REJECT.

This is a Type 1 behavior only. This can be submitted as a maintenance request.

Cl 33 SC 33.2.7.5 P 67 L 1922 # 362  
 Darshan, Yair Microsemi

Comment Type TR Comment Status D PSE Power

The text:  
 "However, for practical implementations, it is recommended that the POWER\_UP mode on a pair set persist for the complete duration of TInrush-2P, as the PSE may not be able to correctly ascertain the conclusion of a PD's inrush behavior."

The problems with this text are:

1. It is redundant. A better version of it can be found in legacy\_powerup variable page 36 lines 11-15.
2. It is not accurate. The text "the PSE may not be able to correctly ascertain the conclusion of a PD's inrush behavior" is incorrect. If you do it in a wrong way than PSE may not know etc. but there is a correct way to do it so I believe that the whole text should be deleted.
3. The state machine variable legacy\_powerup allows it and supply accurate instructions when it is not recommended. (It is not recommended if you look only on the voltage)
4. This text makes assumption that we can't know the inrush profile which is incorrect.
5. This text prevents good working solutions that monitor voltage and current which is important for effective low dissipation POWER-UP control for Type 3 and 4.

*SuggestedRemedy*

Remove the text "However, for practical implementations, it is recommended that the POWER\_UP mode on a pair set persist for the complete duration of TInrush-2P, as the PSE may not be able to correctly ascertain the conclusion of a PD's inrush behavior."

Proposed Response Response Status W

PROPOSED REJECT.

This is only a recommendation and I would not recommend removing it.



IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.4.4 P 36 L 11 # 363  
 Darshan, Yair Microsemi

Comment Type TR Comment Status D PSE State Diagram

The text "... for PSEs that monitor the per pair set voltage output and use that information ...." is not accurate.  
 It should be (adding the word "only"):  
 "... for PSEs that monitor only the per pair set voltage output and use that information ...."  
 It is with sync to lines 13-14 that means the same and use the word "only" as well.

SuggestedRemedy

Repalce The text "... for PSEs that monitor the per pair set voltage output and use that information ...."  
 with:  
 "... for PSEs that monitor only the per pair set voltage output and use that information ...."

Proposed Response Response Status W

PROPOSED REJECT.

This is existing text and should not be changed unless we change it for 4P or HP operation.

This could be filed as a maintenance request.

Cl 33 SC 33.3.7.3 P 90 L 51 # 364  
 Darshan, Yair Microsemi

Comment Type TR Comment Status D PD Inrush

Definition of Cport at the PD over a pair set is not accurate.  
 For a single load PD, 10uF will be seen as 10uF from any pair set by the PSE.  
 And the intention is that we will have twice the capacitor value if we increase the power by a factor of 2.

SuggestedRemedy

Add Editor Note to be added after line 52 page 90:  
 Editor Note: Cport need to be clarified when used in single signature PD and dual signature PD.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change note on line 51 to:

NOTE--Cport per pair set is the Cport seen by an attached PSE when it probes the given pair set.

Cl 33 SC 33.3.7.3 P 90 L 90 # 365  
 Darshan, Yair Microsemi

Comment Type TR Comment Status D PD Inrush

Some of important PD factual behaviour was removed from lines 28-31 that was in IEEE802.3-2012.  
 The reason why they were removed is relevent to the PSE but not relevant for the PD as it is accurate phisycal behaviour of the PD i.e. Inrush current period ends when Cport is charged to 99% of its final value within a time duration of Tinrush-2P minimum per Table 33-11 etc.

SuggestedRemedy

Modify the text per the following instructions:  
 --- new text---.  
 Strike text XXX: (Strike XXX):  
 -----

Inrush current per pair-set is drawn beginning with the application of input voltage at the pair set compliant with Vport\_PD-2P requirements as defined in Table 33-18, and ending --- when Cport is charged to 99% of its final value within a time duration of ---- (strike "before") Tinrush-2P minimum per Table 33-11. After Tinrush-2P min, the PD shall not exceed its per pair set current threshold corresponding to its class level.

Proposed Response Response Status W

PROPOSED REJECT.

This change was made because a PD may not necessarily be done charging its capacitance by Tinrush-2p min, but it is still required to meet the rest of the text such as "After Tinrush-2P min, the PD shall not exceed its per pair set current threshold corresponding to its class level."

In the field, PDs will switch over to their "nominal" current draw once their cap was charged even if it only took 10ms. This note about the cap being charged to 99% was the source of a great deal of confusion.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

CI 33 SC 33.2.7.6 P 68 L # 366  
 Darshan, Yair Microsemi

Comment Type TR Comment Status D PSE Power

Per the current requirements PSE is allowed to remove power if PD consumes power above the advertised class or remove power as a result of overload or short circuit conditions.  
 Currently we have specified the ICUT, TCUT, ILIM, TLIM requirements in order to help us to decide when to remove power.  
 We need to make it clear that PSE may remove power based on the above current and timing thresholds and also based on the measured power consumed from the port as required by other parts of the standard regarding PSE and PD that operating in a conditions that Pclass is violated.

SuggestedRemedy

PSE may remove power from a pair set if the measured power delivered from that pair set or the measured power delivered from both pair sets exceeds the maximum power requested by the PD as advertised by its class.  
 When PSE is measuring its output power and use it to limit the power to the PD or remove power from the port, Icut and ILIM threshold may be ignored.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.  
 Icut and Ilim should not be ignored.

Add text:

"A PSE may remove power from a pair set if the measured power delivered from that pair set or the measured power delivered from both pair sets exceeds the maximum power requested by the PD as advertised by its class."

to end of 33.2.7.6

CI 33 SC 33.2.5.6 P 54 L 44 # 367  
 Darshan, Yair Microsemi

Comment Type TR Comment Status D 4PID

Addressing the text:  
 "Type 3 and Type 4 PSEs shall determine whether an attached PD with classes 0 to 4 is a candidate to receive power on both pair sets prior to applying 4 pair power"  
 Does it means that applying 4P power (all pairs at the same time) is the only choice, can I apply 2P check LLDP and then connect the 2nd pair? this is the reliable way to do it but it reads that I cant do it

SuggestedRemedy

Add note after line 47:  
 Note: Applying 4P power doesn't imply if both pair-set are powered at the same time or one pair set is powered first and later the 2nd pair is powered within the time limit specified in Tble TBD tem TBD."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Add Editor's Note after line 47:

"Editor's Note to be removed before publication: Need to define startup timing for both single and dual-signature PDs."

CI 33 SC 33.2.7 P 62 L 26 # 368  
 Darshan, Yair Microsemi

Comment Type TR Comment Status D PSE Power

We may need to generate a test setup for Table 33-11 item 1a that will take in account possibility of higher PSE Vdiff than 2mV due cross regulation issues in multiport systems. In this kind of systems Vdiff may be >2mV but the effect of P2P\_lunb at high current is negligible due to the fact that the resistance difference that cause the Vdiff is in series to other components that their resistance is much larger the the PCB Rdiff so it will be compensated resulting with negligible effect on P2P\_lunb so it may be a test setup issue but not a real problem.

SuggestedRemedy

To add Editor Note below Table 33-11 page 62 that says:  
 Editor Note:  
 Cross regulation of multiport systems may affect PSE Vdiff and increase it.  
 We need to investigate how to address it in a test setup that will tell us if the increase Vdiff is real issue or to ignore it due to meeting Icont\_2p\_unb ,or we need to increase PSE Vdiff and decrease PD Vdiff to keep same system limitations

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.3.7.3 P 90 L 43 # 369  
 Darshan, Yair Microsemi

Comment Type TR Comment Status D Pres: Table 33-18

We need to research if 180uF total for a single signature PD is sufficient or we must have total of 360uF as per the current draft.

SuggestedRemedy

Add Editor Note after line 48 page 90:  
 Editor Note: To investigate the max Cport value that ensures stable operation for 60W and up to 99.9 W under all current specification of PSE Voltage, Voltage/Current transients, channel resistance range etc.

Proposed Response Response Status W

PROPOSED ACCEPT.

Although the current draft limits single signature PDs to 180uF as the total capacitance is seen on each pair set.

Cl 33 SC 33.3.7.4 P 91 L 44 # 370  
 Darshan, Yair Microsemi

Comment Type T Comment Status D PD Power

I am working on ways to reduce pair maximum current due to Ppeak-PD and E2EP2P\_lunb which affects the values of lcut-2P\_max and ILIM\_2P\_min which eventually affect the transformer design.

Working with current equation 33-12a with the 1.07 constant, is causing ILIM\_2P\_MIN to be too high for Type 4. In addition, since it is new standard we can ease Type 3 currents due to E2EP2P\_lunb and PD peak which doesnt have to be similar to Type 2 specifications.

SuggestedRemedy

1. Change equation 33-12a constant from 1.07 to 1.05.
2. Change lines 35 to 40 to:  
 "Peak power, PPeak\_PD, for Class 0 through 4 is based on Equation (33-12).  
 Peak power, PPeak\_PD, for Class 5 through 8 is based on Equation 33-12a.  
 Equation (33-12) and equation 33-12a are used to approximate the ratiometric peak powers of Class 0 through Class 8. This equation may be used to calculate peak operating power for PPeak\_PD values obtained via Data Link Layer classification or Auto class."

Proposed Response Response Status W

PROPOSED ACCEPT.

Will OBE comment # 359 if accepted.

Cl 33 SC 33.1 P 19 L 11 # 371  
 Thompson, Geoff GraCaSI S.A.

Comment Type E Comment Status D Cabling

THE TEXT: "These entities allow devices to draw/supply power using the same generic cabling as is used for data transmission." is too general. It should be restricted to twisted pair copper cabling.

SuggestedRemedy

CHANGE TEXT TO READ: "These entities allow devices to draw/supply power using the same generic balanced copper cabling as is used for data transmission."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Copper may be too specific. We call out cabling requirements specifically in Table 33-1.

CHANGE TEXT TO READ: "These entities allow devices to draw/supply power using the same generic balanced cabling as is used for data transmission."

Cl 33 SC 33.1.4.1 P 23 L 20 # 372  
 Thompson, Geoff GraCaSI S.A.

Comment Type E Comment Status D Editorial

Reference number is incorrect for TSB-184 in 802.3bx.

SuggestedRemedy

REPLACE "[60]" WITH "[61]"

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

Cl 33 SC 33.1.4.2 P 23 L 33 # 373  
 Thompson, Geoff GraCaSI S.A.

Comment Type E Comment Status D Editorial

The two references in this line (11801, Annex 33) are not hot links.

SuggestedRemedy

Link the references.

Proposed Response Response Status W

PROPOSED ACCEPT.

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.2.1 P 25 L 8 # 374  
 Thompson, Geoff GraCaSI S.A.

Comment Type E Comment Status D PSE Types

THE TEXT: "PSEs may be placed in two locations with respect to the link segment, either coincident with the DTE/ Repeater or midspan." COULD BE MORE CLEAR

SuggestedRemedy  
 REPLACE WITH: "A PSE may be placed in one of two locations with respect to the link segment, either coincident with the DTE/ Repeater or midspan."

Proposed Response Response Status W

PROPOSED REJECT.

This is existing text that we are not changing. This could be filed as a maintenance request.

Cl 33 SC 33.2.5.6 P 54 L 45 # 375  
 Thompson, Geoff GraCaSI S.A.

Comment Type E Comment Status D 4PID

I have no idea what "initially" means in this sentence.

SuggestedRemedy  
 Remove the word "initially".

Proposed Response Response Status W

PROPOSED REJECT.

Better language is always welcome, but "initially" is a key part of the sentence as 4PID can be changed by other things than those listed as determining the initial value.

Cl 33 SC 33.2.9.1 P 72 L 7 # 376  
 Thompson, Geoff GraCaSI S.A.

Comment Type E Comment Status D Editorial

Improve structure/grammar of sub-clause titles and voltage terms

SuggestedRemedy  
 Change  
 "33.2.9.1.1 PSE AC MPS component requirements"  
 to:"33.2.9.1.1 PSE MPS AC component requirements"  
 and:"33.2.9.1.2 PSE DC MPS component requirements"  
 to:"33.2.9.1.2 PSE MPS DC component requirements"  
 and "AC MPS component" to "MPS AC component"  
 and "DC MPS component" to "MPS DC component" throughout the draft

Proposed Response Response Status W

PROPOSED REJECT.

These are the terms used since AF. They should be left the same as I do not think the suggested remedy brings any new clarity to them.

Cl 33 SC 33.1.3 P 21 L 39 # 377  
 Thompson, Geoff GraCaSI S.A.

Comment Type ER Comment Status D Editorial

THE TEXT: "(1.4.336 in P802.3bx/D2.0)." IS OUT OF DATE.  
 THE CURRENT DRAFT IS D3.0

SuggestedRemedy  
 Update to current location, which is 1.4.337 in D3.0

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 165

EZ

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC 33.1.3 P 21 L 41 # 378  
 Thompson, Geoff GraCaSI S.A.  
 Comment Type ER Comment Status D Editorial  
 THE TEXT: "(1.4.268 in 41 P802.3bx/D2.0)." IS OUT OF DATE.  
 THE CURRENT DRAFT IS D3.0  
 SuggestedRemedy  
 Update to current location, which is 1.4.269 in D3.0  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 165  
 EZ

Cl 33 SC 33.1.4 P 22 L 27 # 379  
 Thompson, Geoff GraCaSI S.A.  
 Comment Type ER Comment Status D Unbalance  
 Note 1 points to 33.4.1.2 as well as Annex 33A. 33.4.1.2 is now effectively empty  
 SuggestedRemedy  
 IN LINE 27, REMOVE THE TEXT: "See Section 33.4.1.2"  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 Section 33.4.1.2 still calls out the requirement to meet unbalance requirements stated in ISO/IEC...

Cl 33 SC 33.1.4 P 22 L 30 # 380  
 Thompson, Geoff GraCaSI S.A.  
 Comment Type ER Comment Status D Editorial  
 Note 3 has an open reference and no link to a reference or bibliography entry for TSB-184-A in any form. The bibliography entry which is badly out of date. Further, [B61] (in 802.3bx D3.0) references a prepublication draft of TSB-184 and needs to be updated.  
 SuggestedRemedy  
 Add text to the draft to add the reference or bibliography item and add a hot link to the entry.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.1.4.1 P 23 L 8 # 381  
 Thompson, Geoff GraCaSI S.A.  
 Comment Type ER Comment Status D Editorial  
 Lines 8 thru 9, gauge is misspelled in the new text in two places.  
 SuggestedRemedy  
 REPLACE "guage" (sic) WITH "gauge", 2 places  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 167  
 EZ

Cl 33 SC 33.2.2 P 25 L 19 # 382  
 Thompson, Geoff GraCaSI S.A.  
 Comment Type ER Comment Status D Editorial  
 The title of this sub-clause is "Midspan PSE types" is confusing as the term "Type" is already used to denote current class. Another term than "type" should be used. This will be even more confusing as the number of "Types" proliferates.  
 SuggestedRemedy  
 Change the word "types" in the heading and associated text from "types" to "variants".  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 EZ

Cl 33 SC 33.2.5.0a P 51 L 12 # 383  
 Thompson, Geoff GraCaSI S.A.  
 Comment Type ER Comment Status D Editorial  
 Sub-clause numbering (i.e., the "a" suffix) does not conform to SA Style Manual.  
 SuggestedRemedy  
 Conform to Style Manual 11.1  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 All subclauses should be renumbered properly.  
 This subclause should be 33.2.5.1 and all subsequent subclauses should be increased.

IEEE 802.bt D1.0 4-Pair Power over Ethernet 3rd Task Force review comments

Cl 33 SC P L # 384  
 Thompson, Geoff GraCaSI S.A.  
 Comment Type ER Comment Status D Editorial  
 Draft has both "Auto class" and "Autoclass"  
 SuggestedRemedy  
 Pick one and use it consistently.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 OBE by comment # 142  
 EZ

Cl 33 SC 33.2.3 P 33 L 19 # 385  
 Thompson, Geoff GraCaSI S.A.  
 Comment Type T Comment Status D PSE Types  
 It is not clear to me whether or not this change will end up disenfranchising some currently compliant PSEs. It is unacceptable to do so and I see no need to do so.  
 SuggestedRemedy  
 Restore deleted text or prove that no existing compliant DTE/PSEs are disenfranchised.  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 Type 1 and Type 2 PSEs are allowed to choose either Alt-A configuration (MDI, MDI-X) according to table 33-2a.

Cl 33 SC 33.1.4 P 21 L 53 # 386  
 Thompson, Geoff GraCaSI S.A.  
 Comment Type TR Comment Status D Power System  
 It is not a "link segment" that connects a PSE and a PD when there is a mid-span PSE.  
 SuggestedRemedy  
 Change to "link section" in line 53  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 This is the definition from 1.4:  
 link section: The portion of the link from the PSE to the PD.

Cl 33 SC 33.2.7.8 P 70 L 34 # 387  
 Thompson, Geoff GraCaSI S.A.  
 Comment Type TR Comment Status D PSE Power  
 Spec does not call out how the test resistor is to be hooked to the PI in the 2 pair-set case. Is it across just one, ifso which one? Is it across either? Is it required to be hooked to both.  
 SuggestedRemedy  
 Specify how test resistor is to be hooked to the PI in the case of Type 3 and/or Type 4.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Need a specific remedy.  
 Possible OBE by comment # 6.

Cl 01 SC 1.5 P 18 L 21 # 389  
 Dove, Daniel Dove Networking Solut  
 Comment Type TR Comment Status D Editorial  
 Missing Abbreviations  
 SuggestedRemedy  
 Insert "Dual Signature PD - A Powered Device that presents two signatures, one on each pair set, to the PSE. Single Signature PD - A Powered Device that presents one signature on either pair set, or both simultaneously to the PSE."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Are these abbreviations or definitions?  
 Should SSPD and DSPD be added as definitions?