Cl **33**   *SC* **33.1.4.1**   *P* **23**   *L* **5**   # 1
Maguire, Valerie   Siemon

Comment Type **ER**   *Comment Status* **D**   *Cabling*
Use correct draft Standards name

SuggestedRemedy
Globally replace "TSB-184A" with "TSB-184-A" (3 locations)

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

EZ

Cl **33**   *SC* **33.4.8**   *P* **92**   *L* **15**   # 2
Maguire, Valerie   Siemon

Comment Type **T**   *Comment Status* **D**   *AES*
Use terminology consistent with rest of draft.

SuggestedRemedy
Replace "channel unbalance currents" with "channel current unbalance"

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

EZ

Cl **33**   *SC* **33.2.7.4**   *P* **56**   *L* **43**   # 3
Maguire, Valerie   Siemon

Comment Type **T**   *Comment Status* **D**   *PSE Power*
Clarify type of unbalance (i.e. resistance or current)

SuggestedRemedy
Replace "pair-to-pair unbalance effect" with "pair-to-pair resistance unbalance effect"

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

I believe this is current unbalance

Replace with "pair-to-pair current unblance effect"

Cl **33**   *SC* **33.1.4**   *P* **22**   *L* **22**   # 4
Maguire, Valerie   Siemon

Comment Type **T**   *Comment Status* **D**   *Cabling*
Clarify type of unbalance (i.e. resistance or current)

SuggestedRemedy
Replace "inter-pair unbalance" with "inter-pair resistance unbalance"

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

OBE by comment #50.

EZ

Cl **33**   *SC* **33.8.3.4**   *P* **127**   *L* **20**   # 5
Maguire, Valerie   Siemon

Comment Type **T**   *Comment Status* **D**   *Unbalance*
Clarify type of unbalance (i.e. resistance or current)

SuggestedRemedy
Replace "PSE and PD channel unbalance" with "PSE and PD channel current unbalance"

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

Cl **33**   *SC* **33.2.6**   *P* **47**   *L* **17**   # 6
Bennett, Ken   Sifos Technologies, In

Comment Type **E**   *Comment Status* **D**   *PD Classification*
The sentence "PDs or PSEs which do not implement classification..." suggests that PDs don't have to implement classification, which is incorrect. All PDs provide class information via class current (including 0mA). Any PD which provides a bad class current or which operates beyond their class is not a conformant PD.

SuggestedRemedy
Omit "PDs or" at the beginning of the sentence.

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

This would be a maintenance request as this is existing text which I believe applies to class 0 PDs.

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

Comment ID **6**   Page 1 of 38
5/13/2015 12:55:28 PM

Cl **33**   *SC* **33.2.7.2**   *P* **55**   *L* **25**   # 7

Bennett, Ken   Sifos Technologies, In

Comment Type **ER**   *Comment Status* **D**   *PSE Unbalance*

Table 33-11, Item 20. The specification for Iunb_ptp has been superceeded by item 4.1 and section 33.2.7.4a.

SuggestedRemedy

Remove the Iunb_ptp section from item 20.

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 19

Cl **33**   *SC* **33.2.7.4**   *P* **56**   *L* **34**   # 8

Bennett, Ken   Sifos Technologies, In

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

33.2.7.4 is the additional information for item 4 in table 33-11 (Icon-2P). The Icon_2P equation (0.5*PClass/Vport_2P) for type 3 and 4 in table 33-11 is based upon a perfectly balanced connection, and does not include the additional pair-set current that would be necessary to maintain PClass in an unbalanced connection (due to E2ERunb).

The additional information (Section 33.2.7.4) currently only addresses Ipeak-2P, and it does consider an unbalanced connection, using the (1+K) factor. However, Ipeak-2P described Equation 33-4 includes pair-set values for the PSE and PD, and it is unclear whether the PD pair-set value in 33-4 will also include the K factor (which would result in including K twice).

SuggestedRemedy

Change section 33.2.7.4 as follows:

33.2.7.4 Continuous output current capability in the POWER_ON state

Icon-2P in table 33-11 is specified for a balanced system. When end-to-end unbalance is present, the PSE minimum requirement is:

Icon-2P_unb = (1+K) x (Icon-2P)33-4

Where K is the factor due to the "system end to end pair-to-pair unbalance effect". K=0 for two pair systems and K=TBD for four pair systems.

In addition to ICon-2P_unb, the PSE shall support the following AC current waveform parameters, while within the operating voltage range of VPort_PSE:

IPeak-2P minimum for TCUT minimum and 5 % duty cycle:

[Editorial note: the equation below is unformatted. The only difference relative to Equation 33-4 in 802.3at is the "N" factor]

Ipeak-2P= N×{(Vpse-[SQR_ROOT[Vpse^2-4N(Rchan)(Ppeak_PD)]])/(2N(Rchan))} 33-5

Where:
     Ipeak-2P: is the PSE minimum peak current requirement per pair-set in a balanced system
     VPSE: is the PSE voltage at the PSE PI as defined in 33.1.4
     RChan: is the channel loop resistance as defined in 33.1.4; this parameter has a worst-case value of RCh, defined in Table 33-1
     N: N = 1 for 2-pair power, N = 0.5 for 4-pair power
     PPeak_PD: is the peak power a PD may draw for its class; see Table 33-18.

Ipeak-2P is specified for a balanced system. When end-to-end unbalance is present, minimum PSE pairset requirement is:

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

Comment ID **8**   Page 2 of 38
5/13/2015 12:55:28 PM

$Ipeak\text{-}2P\_unb = (1+K) \times (Ipeak\text{-}2P)33\text{-}6$

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Yair and Ken to work together to find agreement on new text.

Cl **33**   *SC* **33.2.4.1**   *P* **32**   *L* **31**   # 9

Bustos Heredia, Jairo   Würth Elektronik eiSo

Comment Type **E**   *Comment Status* **D**   *PSE Detection*

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

SuggestedRemedy

As we are referring to a time value, it may bring the reader to confusion on whether "min" stands for "minimum" or "minutes". Actually, Tdbo has only one defined value in Table 33-11. Therefore I believe "min" is not needed. Thus, I would suggest the followin:

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

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

EZ

Cl **33**   *SC* **33.2.1**   *P* **24**   *L* **46**   # 10

Bustos Heredia, Jairo   Würth Elektronik eiSo

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

PSEs may support either Alternative A, Alternative B, or both.

SuggestedRemedy

PSEs may support either Alternative A, Alternative B or both. When using Alternative A, power will be provided through pairs 2 and 3, whereas when using Alternative B, pairs 1 and 4 will be used for power provision.

Proposed Response   *Response Status* **W**

PROPOSED REJECT.

These pin definitions are shown in Table 33-2.

Cl **33**   *SC* **33.1.4**   *P* **22**   *L* **21**   # 11

Darshan, Yair   Microsemi

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

Table 33-1.
Some of the TBD parameters can be updated per the work done at page 10 of:
http://www.ieee802.org/3/bt/public/mar15/darshan_01_0315_rev009a.pdf.
Table 33-1 need to be revised per the folowing proposal. Please see attached "Draft D0.4: Revised Table 33-1.pdf:
The parameters are:
Type 4 Icable: 0.962A (TIA guys will have to tell us the # of cables max etc. later)
In addition, the following TBD parameters can be updated as well:
Cable Type: same as in Type 3 and adding a text notifying number of cables per bundle TBD. This will be delivered by TIA etc.
Loop resistance: Same as for Type 3.
To add new row that specify Type 4 parameter for new and better cable that allows 100 cables per bundle. In this row, cabling Type, loop resistance is TBDs.

SuggestedRemedy

Table 33-1 to update the following Type 4 parameters (See attached "Draft D0.4: Revised Table 33-1.pdf" document"):

1. Type 4 Icable: 0.962A.
2. Cable Type: same as in Type 3. Add note below table: "Number of cables per boundle TBD per TBD standard.
3. Loop resistance: Same as for Type 3.
4. To add new row that specify Type 4 parameter for new and better cable that allows 100 cables per bundle. In this row, cabling Type, loop resistance is TBDs. The current is the same as in step 1.

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Need referenced document.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **11**   Page 3 of 38
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   5/13/2015 12:55:28 PM
SORT ORDER: Comment ID

Cl **33**   *SC* **33.1.4**   *P* **22**   *L* **23**   # 12
Darshan, Yair   Microsemi

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

Comment number 2 below Table 33-1.
The comment is correct for Type 3 and 4 but yet it is reffering to Type 3 only.

SuggestedRemedy

Change "In Type 3, 60W operation, the current............ See details in section TBD"

To:
"In Type 3 and 4 operation, the current............ See details in Table 33-11 item 4a"

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

EZ

Cl **33**   *SC* **33.2.4.4**   *P* **37**   *L* **8**   # 13
Darshan, Yair   Microsemi

Comment Type **T**   *Comment Status* **D**   *PSE Classification*

Table 33-3 column "class_num_events" adresses max class_num_events for describing if PSE_DLL_CAPABLE is true or false.

SuggestedRemedy

change column tytle to "max class_num_events"

Proposed Response   *Response Status* **W**

PROPOSED REJECT.

The definition of class_num_events already indicates that it is the maximum number of class events a PSE supports.

Cl **33**   *SC* **33.2.4.4**   *P* **39**   *L* **32**   # 14
Darshan, Yair   Microsemi

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

Missing pointer to do_detection details.

SuggestedRemedy

Add "See 33.2.5"

Proposed Response   *Response Status* **W**

PROPOSED REJECT.

None of the other functions have pointers to their respective sections of the standard.

Cl **33**   *SC* **33.2.4.4**   *P* **40**   *L* **14**   # 15
Darshan, Yair   Microsemi

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

Addressing the editor note of the meaning of mutual identification is not complete:
Mutual identification is not complete if the objectives of 33.2.6 are not met.
This is mentioned in line 5.
""When a Type 2 PSE powers a Type 2, Type 3 or Type 4 PD, the PSE may choose to assign a value of '1' to parameter type if mutual identification is not complete (see 33.2.6) and shall assign....."

Specifically, Mutual identification is not complete per the text in clause 33.2.6.page 47 lines 15-20.
"Mutual identification is the mechanism that allows a Type 2, Type 3 or Type 4 PD to differentiate between Type 1, Type 2, Type 3 and Type 4 PSEs. Additionally, mutual identification allows Type 2, Type 3 or Type 4 PSEs to differentiate between Type 1, Type 2, Type 3 and Type 4 PDs. PDs or PSEs that do not implement classification will not be able to complete mutual identification and can only perform as Type 1 devices."
So if PSE fail to detect the PD class than classification is not complete.
For mutual Identification to be completed, the PD needs to know who is the PSE type etc.

SuggestedRemedy

No need to define "Mutual Identification is not complete". It is already clearly defined in 33.2.6.

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Accepting this comment results in no changes to the text.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **15**   Page 4 of 38
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   5/13/2015 12:55:28 PM
SORT ORDER: Comment ID

Cl **33**   *SC* **33.2.5.0a**   *P* **44**   *L* **3**   # 16

Darshan, Yair   Microsemi

Comment Type **T**   *Comment Status* **D**   *Connection Check*

We need to clarify what is single signature PD and Dual signature PD so it can be tested for compliance.

It can be done by applying voltage Va to mode A and checking the current Ia while applying voltage Vb on mode B and checking Ia when Vb>Va and VB<Va.

This actually verify if there is low impdenace between positive rails of Mode A and Negative rails of Mode B.
If changing Va>Vb or Vb>Va doesnt change the current reading then it is dual signature. Base on this concept Single Signature and Dual Signature can be defined and tested. There are many ways to do it. It is what connection check does.

SuggestedRemedy

Add the drawing and text attached in document "Single Signature and Dual Signature definition and test setup.pdf" at the end of 33.2.5.0a

Proposed Response   *Response Status* **W**

Cl **33**   *SC* **33.2.7**   *P* **53**   *L* **38**   # 17

Darshan, Yair   Microsemi

Comment Type **T**   *Comment Status* **X**   *PSE Unbalance*

1. In previous work: 2mV was subjected to be reduced to 1mV pending final survey results. See page 4 at http://www.ieee802.org/3/bt/public/jan15/darshan_03_0115.pdf. Now we have it.

2. With 2mV currently in the specifications we have:
2.1 >10x margin. No need for it. It will never happen in real life.
2.2 >100% margin is sufficient (with 1mV).

3. Burden on PD is increased during compliance test with high current at short cable by ~1.6% with 2mV instead of 1mV. This 1.6% can be used by PD diodes at high current instead of PSE that don't need it.

4. At low current it affects MPS unbalance at short cable when Ideal diode is used. It doesn't create us problem with the proposed MPS method however for future best spec, if we will ever need low P2P_unb with Ideal diode bridge we can't go back and reduce PSE Vdiff to lower value. So it is better to kill potential problem when possible and not create new ones in the future.

5. This is all about optimizing the spec, as for who will get higher Vdiff budget at high current.

See attached Updated PSE Vdiff for 802.3bt D0.4, darshan_02_0515.pdf for details.

SuggestedRemedy

To Reduce PSE Vdiff in Table 33-11 to 1mV.

Proposed Response   *Response Status* **W**

Would like to hear from system vendors (switch manufacturers) on this topic.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **17**   Page 5 of 38
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   5/13/2015 12:55:28 PM
SORT ORDER: Comment ID

Cl **33**   *SC* **33.2.7**   *P* **55**   *L*   # 18

Darshan, Yair   Microsemi

Comment Type **T**   *Comment Status* **D**   *PSE MPS*

DC MPS current Table 33-11 item 17 and 33.2.9.1.2.

Table 33-11 item 17 do not cover Ihold range for all PSE - PD class and Type
combinations in the presensence of system pair to pair unbalance and/or P2P balanced
conditions and for single and dual signature PDs.
Many of the PSE=PD combinations will not work with the current Ihold range specified for
Type 1 and Type 2 PSEs.

There is a need to set two different sets of Ihold range for measuring total Ihold current
over 4 pairs or over 2pairs in order to allow different MPS detection schemes and reduce
unbalace requirements on PD as much as possible.

The proposed solution in darshan_01_0515.pdf allows the following with cost effective way:
-Support current Type 1,2 PDs and new Type 3 and 4 PDs.
-No requirements for MPS current unbalance for Type 1, 2, 3 class 0-8 PDs connected to
PSE Type 3 and 4 PSEs.
-PSE with flexible MPS detection implementations to cover different PSE

The above proposal offer:
-Simple PD spec.
-Simple test setup.
-Simple PSE MPS detection implementation.

See DC Disconnect PSE and PD requirements baseline proposal presentation attched.

SuggestedRemedy

See proposal and baseline text in the attached presenttaion darshan_01_0515.pdf

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This item needs to be updated. As you are presenting a proposal, I will leave it to that.

Accepting this comment results in no changes to the text.

EZ

Cl **33**   *SC* **33.2.7**   *P* **55**   *L* **26**   # 19

Darshan, Yair   Microsemi

Comment Type **T**   *Comment Status* **D**   *PSE Unbalance*

Table 33-11 item Item 20, Iunb_ptp:
This parameter is redundant for PSE specification after PSE specifications was concluded
on March meeting with the new items:
Table 33-11 item 4a: Icon_2P-unb and clause 33.2.7.4a.
It may be used in PD spec Table 33-18 but is not needed for PSE spec.

SuggestedRemedy

Option 1:
a) Remove Iunb_p2p from Table 33-11 item 20. OR

b) Move this parameter to Table 33-18 new item 14, with the following details:
Parameter: Pair to Pair current unbalance of pairs with the same polarity.
Symbol: Iunb_ptp
Unit: %
Value max: TBD.
Additional information:
See 33.2.7.10.
Add sub-claues 33.2.7.10:
Iunb_ptp=(I1-I2)/(I1+I2).
I1, I2 are the pairs current of the same polarity.
I1 and I2 are measured at the maximum operating PD class power for class TBD1 to Class
TBD2.
Editor note: To complete the PD PI Pair to Pair Unbalance requirements and add it to this
clause.

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Remove Iunb_p2p.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **19**   Page 6 of 38
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   5/13/2015 12:55:28 PM
SORT ORDER: Comment ID

Cl **33**   *SC* **33.2.7.4**   *P* **56**   *L* **34**   # 20
Darshan, Yair   Microsemi

Comment Type **T**   *Comment Status* **D**   *PSE Power*
Equation 33-4 parameters need some updates:
1. PPEAK_pd_2P need to be defined as 0.5*Pclass for classes 5 to 8 (It is half the total power).
2. K is different number for Type 3 and 4 systems.
3. K is derived by simulation of E2EP2PIunb with the same data base we used to define Icon-2P_Iunb but now PD power is Ppeak PD which is defined by Equation 33-12.
4. See derivation of values for K in darashan_03_0515.pdf

SuggestedRemedy
(a) Change from:
PPeak_PD-2P is the peak power a PD may draw per pair-set for its class; see Table 33–18.

To:
PPeak_PD-2P is the peak power a PD may draw per pair-set for its class; see Table 33–18. For classes 5-8, PPeak_PD-2P=0.5*Pclass_PD.

(b) Change from:
K is the related to "system end to end pair-to-pair unbalance effect".
K=0 for two pair systems and K=TBD for four pair system.

To:
K was set at the system operating point were maximum Ipeak-2P is obtained due to "system end to end pair-to-pair unbalance effect".
K=0 for two pair systems (Type 1 and 2).
K=0.3 for Type 3 systems.
K=0.09 for Type 4 systems.
Note: Meeting Ipeak_2P maximum value is guranteed by the PD by meeting PD PI Pair To Pair Unbalance requirements in clause TBD and by Peak_PD-2P defined by Equation 33-12.

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

Yair and Ken to work together to find agreement on new text.

Cl **33**   *SC* **33.2.4.5**   *P* **38**   *L* **13**   # 21
Darshan, Yair   Microsemi

Comment Type **E**   *Comment Status* **D**   *PSE State Diagram*
It seems that there is a Typo here:
The timer name is tlcf_timer and then the text says in line 16: See Tclf in Table 33-7. So we need to decide if it is tclf or tlcf.

In addition, it is Table 33-10 and not 33-7 in lines 13, 15, 36, 40, 44.
In Table 33-10 it is Tclf.

SuggestedRemedy
Change Tlcf_timer to Tclf.
Change "..in Table 33-7" to "...in Table 33-10 and verify the link is correct.
Correct in lines 13, 15, 36, 40, 44.
Scan the draft for similar for all Tlcf and Tclf occurrences and correct accordingly.

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

Change all occurences of Tclf to Tlcf. The "lcf" was meant to stand for long class finger. The state diagram uses lcf and everything should match it.

EZ

Cl **33**   *SC* **33.2.7**   *P* **52**   *L* **46**   # 22
Darshan, Yair   Microsemi

Comment Type **E**   *Comment Status* **D**   *PSE Classification*
The intention of the additional information for TME2 in Table 33-10 was meant to say that the fact that the maximum value of TME3 is not defined, doesn't mean that it can be any number, it actually limited by Tpon.
This may not be clear by the additional information however.

SuggestedRemedy
Change the additional information text from:
The time from end of detection until power-on is limited by 33.2.7.12.

Change the additional information text to:
The maximum value of TME2 is limited by the maximum allowed time from the end of detection until power-on according to 33.2.7.12.

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

EZ

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

Comment ID **22**   Page 7 of 38
5/13/2015 12:55:28 PM

Cl **33** *SC* **33.3.7** *P* **77** *L* **29** # 23
Darshan, Yair Microsemi

Comment Type **E** *Comment Status* **D** *PD Power*
Typo.
Redundant 33.3.7.1 in additional informatione columnn of Table 33-18 item 1.

SuggestedRemedy
Change from 33.3.7.133.3.7.1 to 33.3.7.1.

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

EZ

Cl **33** *SC* **33.3.7** *P* **78** *L* **15** # 24
Darshan, Yair Microsemi

Comment Type **T** *Comment Status* **D** *PD Power*
Table 33-18 item 4: Input average power for class 5 to 8 TBDs can now be calculated and inserted instead of TBDs.
See darshan_03_0515.pdf for details

The equation to be used is:
Pclass_PD=[W]=Pclass - 6.25*(Pclass/Vpse_min)^2=:
Pclass_PD=39.94W for Pclass=45W (Class 5).
Pclass_PD=51W for Pclass=60W (Clas 6).
class_PD=51W for Pclass=75W (Clas 7).

SuggestedRemedy
Update TBDs in item 4 Table 33-18 with:

Pclass_PD=39.94W for Class 5.
Pclass_PD=51W for Class 6.
Pclass_PD=51W for ClasS 7.

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

Correcting for typos and signifcant digits

Update TBDs in item 4 Table 33-18 with:

Pclass_PD=39.9W for Class 5.
Pclass_PD=51W for Class 6.
Pclass_PD=62W for ClasS 7.

EZ

Cl **33** *SC* **33.3.7** *P* **78** *L* **37** # 25
Darshan, Yair Microsemi

Comment Type **T** *Comment Status* **D** *PD Power*
Table 33-18 item 5 and 6.
Peak operating power for class 5 and 6. can be 1.11*Pclass_PD as well due to the fact that class 6 is 2xType 2 power and it is higher than class 5.

Class from analysis done in darshan_03_0515.pdf, class 7 and 8 may also use equation 33-12 as is.

SuggestedRemedy
Replace TBDs in Table 33-18 item 7 for class 5 -8 with 1.11*Pclass_PD.

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

Will wait to see referenced presentation.

Cl **33** *SC* **33.3.7** *P* **79** *L* **15** # 26
Darshan, Yair Microsemi

Comment Type **T** *Comment Status* **D** *PD Power*
1)Table 33-18 item 11 Von and Voff:
PD Type need to be 1,2,3,4.
2) Typo in additional information.

SuggestedRemedy
1) Change PD Type from 1,2, to 1,2,3,4 for both Von and Voff.
2) Change 33.3.7.133.3.7.1 to 33.3.7.1.

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

Proposal "1)" is possibly OBE by comment # 126.

Proposed accept for proposal "2)"

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

Comment ID **26** Page 8 of 38
5/13/2015 12:55:29 PM

Cl **33**   *SC* **33.3.7.3**   *P* **80**   *L* **46**   # 27
Darshan, Yair   Microsemi

Comment Type **T**   *Comment Status* **D**   *PD Power*
It is not clear from Table 33-18 item 9 that the Cport_min=5uF is per pair set.

SuggestedRemedy
Add the following text at the end of 33.3.7.3:
Cport_min is the the minimum value of Cport seen by an attached PSE on two twisted pairs.

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

There is already a note at the end of 33.3.7.3 that address Cport per pair set. This note should be altered to make the meaning clear.

Cl **33**   *SC* **33.3.8**   *P* **85**   *L* **15**   # 28
Darshan, Yair   Microsemi

Comment Type **TR**   *Comment Status* **D**   *PD MPS*
Table 33-18 do not cover MPS input current requirements for PDs that are need to be supported by Type 3 and 4 PSEs under P2P current balanced and unbalanced conditionall.

SuggestedRemedy
Updated Table 33-18 item 1 per proposal attached in darashan_01_0515.pdf.

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

Will hold comment until presentation(s) on this topic.

Cl **33**   *SC* **33.2.7**   *P* **55**   *L* **41**   # 29
Darshan, Yair   Microsemi

Comment Type **E**   *Comment Status* **D**   *PSE Unbalance*
Missing full stop at the end of Note 1.

SuggestedRemedy
Insert full stop at the end of Note 1 text.

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

EZ

Cl **33**   *SC* **33.2.7**   *P* **55**   *L* **41**   # 30
Darshan, Yair   Microsemi

Comment Type **T**   *Comment Status* **D**   *PSE Unbalance*
The parameter "a" is not explained in Note 1.
To define "a" and explain it.

SuggestedRemedy
a=The effect of the system end to end pair to pair resistance/current unbalance that is not specified in this standard explicitly.

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

EZ

Cl **33**   *SC* **33.2.7**   *P* **54**   *L* **33**   # 31
Darshan, Yair   Microsemi

Comment Type **T**   *Comment Status* **D**   *PSE Power*
In Table 33-11 item 10 (TLIM), there is a missing reference at the additional information column.
In addition to 33.2.7.7, there are additional clauses that are relevant for TLIM such as 33.2.7.1 which defined behavior of power removal when pair-set voltage no longer meets Vport_PSE-2P spec.

SuggestedRemedy
Change additional information column from "See 33.2.7.7"

To:
See 33.2.7.7 and 33.2.7.1.

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

TLIM is not referenced is section 33.2.7.1.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **31**   Page 9 of 38
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   5/13/2015 12:55:29 PM
SORT ORDER: Comment ID

Cl **33**   *SC* **33.2.4.7**   *P* **42**   *L* **27**   # 32
Darshan, Yair   Microsemi

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

In state diagrame figure 33-9 there is a missing exit from CLASS_EV3 to point "E" which we have in all other CLASS_EV_XX BLOCKS.

In addition, an exit is missing also from CLASS_EV3 to MARK_EV_LAST as we have it also from other CLASS_EV_XX BLOCKS.

SuggestedRemedy

1) Add exit from CLASS_EV3 to point "E": Tcle3_timer_done*(mr_pd_class_dectted=0)

2) Add exit from CLASS_EV3 to MARK_EV_LAST:
Tcle3_timer_done*(mr_pd_class_dectted=4)

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

There is no need for an exit from CLASS_EV3 to E as there can be no class mismatch in CLASS_EV3 (all class signatures are valid in CLASS_EV3).

There is an exit to MARK_EV_LAST from CLASS_EV3, but "Tcle3_timer_done * " needs to be added in front of "(mr_pd_class_detected = 4)"

Cl **33**   *SC* **33.2.6.2**   *P* **50**   *L* **31**   # 33
Darshan, Yair   Microsemi

Comment Type **T**   *Comment Status* **D**   *PSE Classification*
Table 33-TBD is Table 33-9

SuggestedRemedy
Replace Table 33-TBD with Table 33-9.
Same in line 45 and 53

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

EZ

Cl **33**   *SC* **33.2.9.1.2**   *P* **63**   *L* **2**   # 34
Darshan, Yair   Microsemi

Comment Type **ER**   *Comment Status* **D**   *PSE MPS*
Duplicate table 33-1 name.
We have Table 33-1 in page 22.
I belive it is 33-12 (AC disconnect parameters)

SuggestedRemedy
Change to 33-12.

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

EZ

Cl **33**   *SC* **33.3.8**   *P* **85**   *L* **13**   # 35
Darshan, Yair   Microsemi

Comment Type **TR**   *Comment Status* **D**   *PD MPS*
The Iport_MPS conditions for Type 1-4 are not specified.

SuggestedRemedy
In Table 33-18 item 1 for PD Type 1-4:
Add to th econdition column:
for Single Signature PD and class 0-4.

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

There will be presentation(s) including baseline text on this topic in May. Hold comment until then.

Cl **33**   *SC* **33.3.8**   *P* **85**   *L* **15**   # 36
Dwelley, David   Linear Technology

Comment Type **T**   *Comment Status* **D**   *PD MPS*
Type 3/4 MPS has become more complicated and the 22mA number is obsolete

SuggestedRemedy
Rewrite spec based on results of joint presentation in May

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

Will hold comment until presentation(s) on this topic.

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

Comment ID **36**   Page 10 of 38
5/13/2015 12:55:29 PM

Cl **33**   *SC* **33.2.0a**   *P* **24**   *L* **30**   # 37
Dwelley, David   Linear Technology

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

Table 33-1a, Note 4: "Can operate as 2-pair under fault conditions" is unnecessary and suggests that 2-pair operation is specified behavior for 60W and greater PDs. 2-pair operation is not possible at these power levels, and fault behavior is not typically specified.

SuggestedRemedy

Delete note 4.

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

If operating over 2 pairs under fault conditions, the PSE would then be a 30W or less PSE and would be covered by other rows in this table.

Would OBE part of comment #59.

Cl **33**   *SC* **33.2.0a**   *P* **24**   *L* **24**   # 38
Dwelley, David   Linear Technology

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

Table 33-1a: 75W class is missing

SuggestedRemedy

Add row for 75W class

Proposed Response   *Response Status* **W**

PROPOSED REJECT.

The table is for "Permissible PSE Types". 75W is not a Type boundary and should not be listed, just as 45W and all of the classes <15W are not listed.

Cl **33**   *SC* **33.2.4.1**   *P* **32**   *L* **20**   # 39
Dwelley, David   Linear Technology

Comment Type **T**   *Comment Status* **D**   *4P Power*

Unclear text: "A Type 3 or Type 4 PSE that is capable of delivering power over both Alternative A and Alternative B simultaneously is not required to meet backoff algorithm."

SuggestedRemedy

Replace with: "A Type 3 or Type 4 PSE that intends to provide power on both Alternative A and Alternative B is not required to use the backoff algorithm."

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

How about: "A Type 3 or Type 4 PSE that delivers power over both Alternative A and Alternative B simultaneously is not required to use the backoff algorithm.

Cl **33**   *SC* **33.2.5.0a**   *P* **43**   *L* **52**   # 40
Dwelley, David   Linear Technology

Comment Type **T**   *Comment Status* **D**   *Connection Check*

"In addition, only tests that result in a voltage at the PSE PI that is within the Vvalid voltage range as specified..."

Vvalid is 2.8V-10V. This line as written blocks the use of 0V (i.e., one channel detecting while the other is idle) for Connection Check. This limits the way that connection check can be run.

SuggestedRemedy

Change text to: "In addition, only tests that result in a voltage at the PSE PI that is below Vvalid(max) as specified..."

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

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

Comment ID **40**   Page 11 of 38
5/13/2015 12:55:29 PM

Cl **33** *SC* **33.3.2** *P* **65** *L* **49** # 41

Dwelley, David Linear Technology

Comment Type **T** *Comment Status* **D** *PD Types*

Table 33-13a, Note 2: "Needs 4-Pair Identification before enabling 4-pair power. See Section TBD for details."

Enabling 4-pair power is a PSE function, not a PD function.

SuggestedRemedy

Remove Note 2.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace "Yes" in 4-pair Capable column with "Mandatory" for all Type 3 or Type 4 rows.

Replace "Allowed" in 4-pair Capable column with "Optional" for all Type 1 and Type 2 rows.

Remove note 2. Need to add 4PID information to PSE section.

Cl **33** *SC* **33.3.5.2** *P* **75** *L* **21** # 42

Dwelley, David Linear Technology

Comment Type **TR** *Comment Status* **X** *PD Classification*

Table 33-16a: class mapping will cause LT legacy PDs to motorboat. Reversing classes 7 and 8 looks weird but will improve interoperability in the field.

SuggestedRemedy

Reverse class_sig_B mappings for classes 7 and 8:
class 7: class_sig_B: 3
class 8: class_sig_B: 2

Proposed Response *Response Status* **W**

Would like to hear group's opinion…

Cl **33** *SC* **33.2.4.1** *P* **32** *L* **21** # 43

Stencel, Len Bourns, Inc.

Comment Type **E** *Comment Status* **D** *PSE Detection*

text correction

SuggestedRemedy

Change "meet backoff algorithm" to "meet the backoff algorithm requirement".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment #118.

EZ

Cl **33** *SC* **33.2.5** *P* **43** *L* **41** # 44

Stencel, Len Bourns, Inc.

Comment Type **E** *Comment Status* **D** *PSE Detection*

Clarify text. Rewrite sentence "The PSE shall turn on power only on the same pairs as those used for two-pair detection."

SuggestedRemedy

change t: "The PSE shall only turn on power to the pairs on which a valid PD is detected."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This sentence is no longer needed now that "the PI" has been replaced with "a pair-set" in the first sentence in section 33.2.5:

"In any operation state, the PSE shall not apply power to a pair-set until the PSE has successfully detected a valid signature over that pair-set."

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

Comment ID **44** Page 12 of 38
5/13/2015 12:55:29 PM

Cl **33**   *SC* **33.2.5.2**   *P* **45**   *L* **46**   # 45

Stencel, Len   Bourns, Inc.

Comment Type **ER**   *Comment Status* **D**   *PSE Detection*

Incorrect tablenumber. link is good.

SuggestedRemedy

change table 33-1 to table 33-4.

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 48.

EZ

Cl **33**   *SC* **33.2.5.3**   *P* **45**   *L* **54**   # 46

Stencel, Len   Bourns, Inc.

Comment Type **ER**   *Comment Status* **D**   *PSE Detection*

Incorrect table number

SuggestedRemedy

change table 33-2 to Table 33-5

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 48.

EZ

Cl **33**   *SC* **33.2.5.4**   *P* **46**   *L* **30**   # 47

Stencel, Len   Bourns, Inc.

Comment Type **ER**   *Comment Status* **D**   *PSE Detection*

incorrect table number

SuggestedRemedy

change table 33-3 to Table 33-6

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 48.

EZ

Cl **33**   *SC* **33.2.5.1**   *P* **44**   *L* **49**   # 48

Stencel, Len   Bourns, Inc.

Comment Type **ER**   *Comment Status* **D**   *PSE Detection*

incorrect table number`

SuggestedRemedy

change Table 33-1 to Table 33-4.

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Fix all table references in the PSE Detection sections (33.2.5.1-33.2.5.5).

EZ

Cl **33**   *SC* **33.2.1**   *P* **24**   *L* **42**   # 49

Stencel, Len   Bourns, Inc.

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

Need to Add 2 diagrams showing Alt A and Alt B for an End PSE. Only midspan version is shown.

SuggestedRemedy

Add 2 Additional figures:
figure 33-1a   10BASE-T/100BASE-TX Endpoint PSE Alt A and Alt B
Figure 33-2a   1000BASE-T/10GBASE-T Endpoint PSE Alt A and Alt B
or
Add Figure 33-5 to text and make these two diagrams figures 33-5a and 33-5b.

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Need to create figures…

EZ

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **49**   Page 13 of 38
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   5/13/2015 12:55:29 PM
SORT ORDER: Comment ID

Cl **33**　　*SC* **33.1.4**　　　　*P* **22**　　*L* **22**　　# 50

Beia, Christian　　　　　　　STMicroelectronics

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

Note1 after able 33-1 refers to Annex 33A inaccurately. It is about channel pair to pair resistance unbalance, not about inter-pair unbalance

SuggestedRemedy

Replace:
See informative annex 33A for inter-pair unbalance.
With:
See informative annex 33A for Channel pair to pair resistance unbalance.

Proposed Response　　*Response Status* **W**

PROPOSED ACCEPT.

EZ

Cl **33**　　*SC* **33.3.3.3**　　　　*P* **68**　　*L* **17**　　# 51

Beia, Christian　　　　　　　STMicroelectronics

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

The variable name change from pse_dll_power_type to pse_dll_power_type is unnecessary and does not correspond to the name in the state diagram on page 111 (clause 33.6.3.5)

SuggestedRemedy

restore the variable name "pse_dll_power_type" instead of "pse_dll_power_level"

Proposed Response　　*Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 91.

Cl **33**　　*SC* **33.4.9.2.1**　　　*P* **99**　　*L* **23**　　# 52

Beia, Christian　　　　　　　STMicroelectronics

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

Figure 33-1.
The figures numbering on this page till the end of clause 33 is wrong, because it restarts from 33-1, while it should continue as 33-26.

SuggestedRemedy

Renumber Figure 33-1 on page 99 as 33-26; 33-2 on page 110 as 33-27; 33-3 on page 111 as 33-28.

Proposed Response　　*Response Status* **W**

PROPOSED ACCEPT.

EZ

Cl **33**　　*SC* **33.3.3.4a**　　　*P* **69**　　*L* **8**　　# 53

Beia, Christian　　　　　　　STMicroelectronics

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

Function do_class_timing: the classification event timing requirements to evaluate PD MPS timings are not defined in Table 33-7. Actually they should be defined in Table 33-17 (but they aren't - another comment is addressing this)

SuggestedRemedy

Change text:
The classification event timing requirements are defined in Table 33–7
With:
The classification event timing requirements are defined in Table 33–17

Proposed Response　　*Response Status* **W**

PROPOSED ACCEPT.

EZ

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general　　　　*Comment ID* **53**　　Page 14 of 38
COMMENT STATUS: D/dispatched A/accepted R/rejected　　RESPONSE STATUS: O/open W/written C/closed Z/withdrawn　　　　　　5/13/2015 12:55:29 PM
SORT ORDER: Comment ID

Cl **33**   *SC* **33.3.5.3**   *P* **76**   *L* **37**   # 54
Beia, Christian   STMicroelectronics

Comment Type **TR**   *Comment Status* **D**   *PD Classification*
Table 33-17.
The autoclass signature timing specification TACS introduces an unnecessary design
burden to the PD, since +-3ms window over a 80ms timer requires a clock accuracy better
than +-4%.
This is the only parameter requiring such a high accuracy of PD internal clock.
Since this PD behavior is a response to a PSE long finger, tentatively specified in table 33-
11 as TLCF=85ms min, the requirement for TACS can be relaxed still maintaining a good
margin (grey area) on PSE timings (1ms after Tpdc_max and before TLCF_min)

SuggestedRemedy
Change TACS min value to 76ms and max value to 84ms.

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

Change TACS min value to 75.5ms and max value to 84.5ms.

Cl **33**   *SC* **33.3.3.3**   *P* **68**   *L* **34**   # 55
Beia, Christian   STMicroelectronics

Comment Type **TR**   *Comment Status* **D**   *PD State Diagram*
pse_power_level value #4 in pse_power_level variable description should indicate the
maximum power supplied by a Type4 PSE, which is Class 8.

SuggestedRemedy
Replace:
4: The PSE is delivering the PD's requested power or Class 7 power, whichever is less.
With:
4: The PSE is delivering the PD's requested power or Class 8 power, whichever is less.

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

OBE by comment #136

EZ

Cl **33**   *SC* **33.3.5.2**   *P* **75**   *L* **33**   # 56
Beia, Christian   STMicroelectronics

Comment Type **TR**   *Comment Status* **D**   *PD Classification*
Table 33-17.
Among the PD Classification electrical requirements, the long first class event definition,
used to determine the PSE MPS capability, is missing. The PD TLCF definition is
necessary because it is mentioned in table 33-19a.
The Auto class signature timing in 33-17a (TACS) cannot be used, as it specifically refers
to the Autoclass feature and not to MPS.
However the timing requirements are the same for both (in the range of Tpdc_max to
TLCF_min as specified in table 33-10), with some grey area margin.
To keep PD design simple (5% clock accuracy) a grey area margin of 1ms is suggested.

SuggestedRemedy
Add a line in Table 33-17 for:
Item: "7"; parameter: "Long first class event timing"; Symbol: "TLCF"; Units:"ms"; Min:
"76ms"; Max: "84ms"; Additional information: "See 33.3.8"

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

Added as much range as possible while still keeping some margin. Added PD to the
symbol name to differentiate from the PSE variable.

Add a line in Table 33-17 for:
Item: "7"; parameter: "Long first class event timing"; Symbol: "TLCF_PD"; Units:"ms"; Min:
"75.5ms"; Max: "84.5ms"; Additional information: "See 33.3.8"

Cl **33**   *SC* **33.3.8**   *P* **84**   *L* **33**   # 57
Schindler, Fred   Seen Simply

Comment Type **E**   *Comment Status* **D**   *PD MPS*
Strike "In addition," to make the sentence more consise and powerful.

SuggestedRemedy
See above.

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

EZ

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **57**   Page 15 of 38
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   5/13/2015 12:55:29 PM
SORT ORDER: Comment ID

Cl **33**   *SC* **33.1**   *P*   *L* **11**   # 58
Schindler, Fred   Seen Simply

Comment Type   **ER**   *Comment Status* **D**   *Maintenance*
    Several new additions use the construct choice1/choice2 to signify something that may be
    missinterpreted. Some of this construction are used in legacy text too.

SuggestedRemedy
    Replace these constructs with words. For example,

    These enitites allow devices to draw or supply ...

Proposed Response   *Response Status* **W**
    The specific text referenced on line 11 is existing text that we have not changed. This
    should be filed as a maintenance request.

    PROPOSED REJECT.

Cl **33**   *SC* **33.2.01**   *P* **24**   *L* **29**   # 59
Schindler, Fred   Seen Simply

Comment Type   **ER**   *Comment Status* **D**   *Types*
    New text in the specification uses the word can rather than the word may.
    For example,

    Can operate as 2-pair under fault conditions

    "May" provides permission whereas "can" states ability.

SuggestedRemedy
    Replace constructs using "can" that provide permission with "may. " End notes containing
    these constructs with a period.

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

    Add period to end of note 1.

    Replace Note 4 with: "May operate over 2 pairs under fault conditions."

    EZ

Cl **33**   *SC* **33.2.6.2**   *P* **50**   *L* **31**   # 60
Schindler, Fred   Seen Simply

Comment Type   **ER**   *Comment Status* **D**   *PSE Classification*
    a TBD table (figure etc) exists please begin using a construct like TBD-# to identify the
    table to be used. If the table (figure etc) needs to be created use a construct like TBD-
    unavailable.

SuggestedRemedy
    Please consider using the above suggestion to make the text easier to review.

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

    OBE by comment # 33.

    EZ

Cl **33**   *SC* **33.2.5.3**   *P* **45**   *L* **52**   # 61
Schindler, Fred   Seen Simply

Comment Type   **ER**   *Comment Status* **D**   *PSE Detection*
    "A PSE shall accept as a valid signature a pair-set within a link section with ..."

    The sentence construction is incorrect.

SuggestedRemedy
    Consider,

    "A PSE valid signature on a pair-set within a link section shall have the following
    characteristics, ..."

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

    The sentence uses the same form that exists in the current standard. In addition, the
    suggestion uses the term "PSE valid signature" which is not correct.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **61**   Page 16 of 38
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   5/13/2015 12:55:29 PM
SORT ORDER: Comment ID

Cl **33**　　*SC* **33.2.7**　　　　　*P* **55**　　*L* **40**　　# 62
Schindler, Fred　　　　　　　　Seen Simply

Comment Type **ER**　　*Comment Status* **D**　　　　　*PSE Unbalance*
Define variable a.

SuggestedRemedy
Define variable a.

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

Alpha is the unbalance factor between the pair sets. It should be noted somewhere.

OBE by comment # 30

EZ

Cl **33**　　*SC* **33.2.7.4a**　　　*P* **57**　　*L* **10**　　# 63
Schindler, Fred　　　　　　　　Seen Simply

Comment Type **ER**　　*Comment Status* **D**　　　　　*Editorial*
We should determine if the IEEE has rules for variable subscripts. Sometimes we use lower case, upper case, or a combination if cases.

SuggestedRemedy
We should review the conventions and adapt variables to fit them.

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

Cl **33**　　*SC* **33.2.7.11**　　　*P* **61**　　*L* **35**　　# 64
Schindler, Fred　　　　　　　　Seen Simply

Comment Type **ER**　　*Comment Status* **D**　　　　　*PSE Unbalance*
The senetence applies to Types 2,3 and 4.

SuggestedRemedy
Type 2, Type 3, and Type 4 Endpoint PSEs shall meet the requirements of 25.4.5 in the presence of (Iunb / 2).

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

EZ

Cl **33**　　*SC* **33.3.2**　　　　　*P* **65**　　*L* **32**　　# 65
Schindler, Fred　　　　　　　　Seen Simply

Comment Type **ER**　　*Comment Status* **D**　　　　　*PD Types*
Replace the Type 1 row, "May be" with "Allowed."

SuggestedRemedy
See above.

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

Possible OBE by comment # 109

make change if comment #109 is not resolved with a change to this text.

EZ

Cl **33**　　*SC* **33.3.5.3**　　　*P* **76**　　*L* **20**　　# 66
Schindler, Fred　　　　　　　　Seen Simply

Comment Type **ER**　　*Comment Status* **D**　　　　　*PSE Classification*
Replace " the PD to which it is connected." with

SuggestedRemedy
" the connected PD."

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

EZ

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

Comment ID **66**　　Page 17 of 38
5/13/2015 12:55:29 PM

Cl **33**   *SC* **33.2.4.1**   *P* **32**   *L* **20**   # 67
Schindler, Fred   Seen Simply

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

This text permits a new Type midspan to power the PD using 4P but it does not ensure this
will be the case.

Replacing this text to requiring legacy behavior permits a consistent process to be used by
customers to locate this potential problem. If a midspan is placed between an end-point
PSE and a PD, normally the end-point PSE will power the PD.

This undesirable operation can then be discovered remotely by looking at the end-point
PSE. Upon discovery, the admin may disable the end-point PSE port to ensure the
midspan always powers the PD.

If the existing text is used the configuration may be different after each power cycle.

SuggestedRemedy

Stike the added sentence.

Proposed Response   *Response Status* **W**

PROPOSED REJECT.

Should we require 4P midspans to use the back-off algorithm? Maybe.

We should NOT require 4P endspans to use the back-off algorithm which striking this
sentence would require.

Cl **33**   *SC* **33.2.4.5**   *P* **38**   *L* **15**   # 68
Schindler, Fred   Seen Simply

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

Fix Typo for TCLf

SuggestedRemedy

Use TCLF

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment # 21.

EZ

Cl **33**   *SC* **33.2.6**   *P* **47**   *L* **30**   # 69
Schindler, Fred   Seen Simply

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

A definition for Vport_PSE-2p needs to be created.

SuggestedRemedy

A definition for Vport_PSE-2p needs to be created.

Proposed Response   *Response Status* **W**

PROPOSED REJECT.

Vport_PSE-2p is a parameter whose limits are given in Table 33-11. This sentence
assigns the minimum value of this parameter to V_PSE which is defined in 1.4.423 (see
line 43).

Cl **33**   *SC* **33.2.7**   *P* **54**   *L* **36**   # 70
Schindler, Fred   Seen Simply

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

This parameter applies to all Types. So does parameter items 13, 14, 15,16, 22, and 24.
See related comment on item 11.

SuggestedRemedy

List 1,2,3,4 for valid Types in the above items.

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Item 11 should have 1,2,3,4 listed for valid Types.

The other items you list need to be considered for 4-pair operation.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **70**   Page 18 of 38
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   5/13/2015 12:55:29 PM
SORT ORDER: Comment ID

Cl **33** *SC* **33.2.9.1.1** *P* **62** *L* **28** # 71
Schindler, Fred   Seen Simply

Comment Type **TR** *Comment Status* **D**   *PSE MPS*
 The Task Force should determine whether new Types may use AC MPS.

 If permitted several parameters may need to be recheck to ensure interoperability. For
 example, the minimum VPSE may need to drop from 52V to a lower value.

SuggestedRemedy
 Determine if the Task Force wants to have new Types use AC MPS and adjust text
 accordingly.

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

 We will ask the task force. I expect the answer to be no.

 If no: Add that Type 1 and Type 2 PSEs are the only PSEs that can do AC MPS.

Cl **33** *SC* **33.2.7.4a** *P* **57** *L* **17** # 72
Schindler, Fred   Seen Simply

Comment Type **E** *Comment Status* **D**   *PSE Unbalance*
 This section only applies to Types 3 and 4.

SuggestedRemedy
 Recommend calling Types out that this section applies to near the beginning of this section
 to reduce text that a reader must parse to discover what is covered.

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

 Need actual text…

Cl **33** *SC* **33.3.5.3** *P* **76** *L* **29** # 73
Schindler, Fred   Seen Simply

Comment Type **TR** *Comment Status* **D**   *PD Classification*
 Some of the requirements for Autoclass need to be covered.

SuggestedRemedy
 Add requirements for the time over which the measurement is averaged. Suggest a 1-
 second sliding window is used that is valid within TAUTO_PD1 to TAUTO_PD2.

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

 We should make it clear that the power drawn during the timeframe Tauto_pd1 to
 Tauto_pd2 is used to determine a new Pclass_pd (which has a definition of how it is
 measured in 33.3.7.2).

Cl **33** *SC* **33.2.7** *P* **54** *L* **36** # 74
Schindler, Fred   Seen Simply

Comment Type **TR** *Comment Status* **D**   *PSE Power*
 Pcon is the average power of the PI. This may be equal to Pclass or it may be equal to the
 combined Pclass of each pair-set for dual-signature PDs. This applies to all Types.

SuggestedRemedy
 Reference the section that covers these exceptions. List all Types.

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

 This topic needs to be addressed in a Single and Dual PD presentation…

Cl **33** *SC* **33.2.4.7** *P* **42** *L* **2** # 75
Schindler, Fred   Seen Simply

Comment Type **TR** *Comment Status* **D**   *PSE State Diagram*
 Where is entry point "A1" coming from?

SuggestedRemedy
 If "A1" is just another portion of "A" replace "A1" with "A."

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

 "A1" needs a separate entrance because it leads to a different state than "A". An "A1" exit
 from the main diagram needs to be added and this will be done when the state diagram is
 updated.

 Accepting this comment does not result in any changes to the text as of now.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **75** Page 19 of 38
COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   5/13/2015 12:55:29 PM
SORT ORDER: Comment ID

Cl **33**   *SC* **33.6.3.2**   *P* **105**   *L* **35-4**   # 76

Yseboodt, Lennart   Philips

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

PD_DLLMAX_VALUE is still TBD for Class 5 and up. Can now be filled out since PD
powers are known.
Note: pd_max_power for class 8 is still TBD pending another comment.

SuggestedRemedy

PD_DLLMAX_VALUE =
pd_max_power 5   399
pd_max_power 6   510
pd_max_power 7   620
pd_max_power 8   TBD

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Cl **33**   *SC* **33.6.3.2**   *P* **105**   *L* **35-4**   # 77

Yseboodt, Lennart   Philips

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

For Type 4 the Type max power is 99.9W
LLDP is a way for the PD to request power beyond what L1 classification can deliver.
A PSE that sources 99.9W (@52V) will deliver 76.8W at the PD PI (6.25 ohm channel).

SuggestedRemedy

PD_DLLMAX_VALUE =
pd_max_power 8   768

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

No real PSE will be able to supply this power as some margin is needed in the power limit.

Cl **33**   *SC* **33.6.3.2**   *P* **105**   *L* **42-5**   # 78

Yseboodt, Lennart   Philips

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

PD_INITIAL_VALUE is still TBD for Class 5 and up. Can now be filled out since PD powers
are known.

SuggestedRemedy

PD_DLLMAX_VALUE =
pd_max_power 5   <= 399
pd_max_power 6   <= 510
pd_max_power 7   <= 620
pd_max_power 8   <= 713

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Cl **33**   *SC* **33.6**   *P* **104**   *L* **24-2**   # 79

Yseboodt, Lennart   Philips

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

"Type 2 PDs that require more than 13.0 W support Data Link Layer classification (see
33.3.5).
Data Link Layer classification is optional for all other devices."

Last scentence needs to be adjusted for Type 3 and 4.

SuggestedRemedy

Replace text by:
"Type 2, 3 and 4 PDs that require more than 13.0 W support Data Link Layer classification
(see 33.3.5).
Data Link Layer classification is optional for all other devices."

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

EZ

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **79**   Page 20 of 38
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   5/13/2015 12:55:29 PM
SORT ORDER: Comment ID

Cl **33**　　*SC* **33.6.2**　　　　　*P* **104**　　*L* **41**　　　# 80
Yseboodt, Lennart　　　　　　　Philips

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

"*A* Type 2, 3, and 4 PSEs shall send an LLDPDU containing..."

SuggestedRemedy

"Type 2, 3, and 4 PSEs shall send an LLDPDU containing..."

Proposed Response　　*Response Status* **W**

PROPOSED ACCEPT.

EZ

Cl **33**　　*SC* **33.2.6**　　　　　*P* **49**　　*L* **34-3**　　# 81
Yseboodt, Lennart　　　　　　　Philips

Comment Type **E**　　*Comment Status* **D**　　　　*PSE Classification*

"Subsequent to successful detection, all Type 2 PSEs perform classificaiton using at least one of the
following: 2-Event Physical Layer classification; 2-Event Physical Layer classification and Data Link Layer
classification; or 1-Event Physical Layer classification and Data Link Layer classification."

2-Event should be Multiple-Event.

SuggestedRemedy

"Subsequent to successful detection, all Type 2 PSEs perform classification using at least one of the
following: Multiple-Event Physical Layer classification; Multiple-Event Physical Layer classification and Data Link Layer
classification; or 1-Event Physical Layer classification and Data Link Layer classification."

Proposed Response　　*Response Status* **W**

PROPOSED ACCEPT.

EZ

Cl **33**　　*SC* **33.2.9.1.1**　　　*P* **63**　　*L* **1**　　　# 82
Yseboodt, Lennart　　　　　　　Philips

Comment Type **E**　　*Comment Status* **D**　　　　*PSE MPS*

The Table titled "PSE PI parameters for AC disconnect-detection functions" is incorrectly numbered Table 33-1.

SuggestedRemedy

Replace "Table 33-1" by Table "33-12".

Proposed Response　　*Response Status* **W**

PROPOSED ACCEPT.

EZ

Cl **33**　　*SC* **33.2.6.1**　　　　*P* **50**　　*L* **3**　　　# 83
Yseboodt, Lennart　　　　　　　Philips

Comment Type **E**　　*Comment Status* **D**　　　　*PSE Classificaiton*

"Polarity shall be the same as defined for V Port_PSE-2P in 33.2.3 and timing specifications shall be as defined
by T pdc in Table 33–7."
T_pdc is not defined in Table 33-7, but in 33-10.

SuggestedRemedy

"Polarity shall be the same as defined for V Port_PSE-2P in 33.2.3 and timing specifications shall be as defined
by T_pdc in Table 33-10."

Proposed Response　　*Response Status* **W**

PROPOSED ACCEPT.

EZ

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

Comment ID **83**

Page 21 of 38
5/13/2015 12:55:29 PM

Cl **33**   *SC* **33.2.6.1**   *P* **50**   *L* **5-6**   # 84
Yseboodt, Lennart   Philips

Comment Type **E**   *Comment Status* **D**   *PSE Classification*

"The PSE shall measure the resultant I Class and classify the PD based on the observed
current according to
Table 33-6."
I believe Table 33-9 is meant (please check).

SuggestedRemedy

"The PSE shall measure the resultant I Class and classify the PD based on the observed
current according to
Table 33-9."

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

EZ

Cl **33**   *SC* **33.2.6.1**   *P* **50**   *L* **5-6**   # 85
Yseboodt, Lennart   Philips

Comment Type **E**   *Comment Status* **D**   *PSE Classification*

"All measurements of I Class shall be taken after the minimum relevant class event timing
in Table 33-7."
Wrong Table reference.

SuggestedRemedy

"All measurements of I Class shall be taken after the minimum relevant class event timing
in Table 33-10."

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

EZ

Cl **33**   *SC* **33.2.6.1**   *P* **50**   *L* **9-10**   # 86
Yseboodt, Lennart   Philips

Comment Type **T**   *Comment Status* **D**   *PSE Classification*

"If the result of the class event is Class 4, a Type 1 PSE shall assign the PD to Class 0; a
Type 2, Type 3 or
Type 4 PSE treats the PD as a Type 2 PD but may provide Class 0 power until mutual
identification is complete."

This refers to Type 2 PSEs that use 1-Event Physical Layer classification and Data Link
Layer classification.
This option does not exists for Type 3 or 4 PSEs, unless they are limited to Class 3 power
or lower.

SuggestedRemedy

"If the result of the class event is Class 4, a Type 1 PSE shall assign the PD to Class 0; a
Type 2 PSE
treats the PD as a Type 2 PD but may provide Class 0 power until mutual identification is
complete."

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

This is indeed in the 1-Event Physical Layer Classification section.

Cl **33**   *SC* **33.2.6.2**   *P* **50-51**   *L* **1-54**   # 87
Yseboodt, Lennart   Philips

Comment Type **E**   *Comment Status* **D**   *PSE Classification*

There are 10 references to Table 33-7, all incorrect.

SuggestedRemedy

Change every instance of Table 33-7 to Table 33-10 in 33.2.6.2

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

EZ

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **87**   Page 22 of 38
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   5/13/2015 12:55:29 PM
SORT ORDER: Comment ID

Cl **33** *SC* **33.2.3** *P* **31** *L* **8-23** # 88
Yseboodt, Lennart Philips

Comment Type **T** *Comment Status* **D** *Types*
In a 4P system, the word Alternative in Table 33-2 implies
that either A or B can be chosen but not both.

SuggestedRemedy
Rename "Alternative" to "Configuration".
This renaming will also affect other mentions of Alternative
in the draft.

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

I do not believe that the word "alternative" is causing confusion when applied to 4-pair
power.

Cl **33** *SC* **33.2.4.4** *P* **37** *L* **37-3** # 89
Yseboodt, Lennart Philips

Comment Type **E** *Comment Status* **D** *PSE Classification*
"or a PSE that has hardware limitation."

SuggestedRemedy
"or a PSE that has a hardware limitation."

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

EZ

Cl **33** *SC* **33.2.7.7** *P* **59** *L* **19** # 90
Yseboodt, Lennart Philips

Comment Type **E** *Comment Status* **D** *PSE Power*
"A PSE may remove power from a pair-set of a PI if the *the* pair-set current..."

SuggestedRemedy
"A PSE may remove power from a pair-set of a PI if the pair-set current..."

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

EZ

Cl **33** *SC* **33.3.3.3** *P* **68** *L* **16-3** # 91
Yseboodt, Lennart Philips

Comment Type **E** *Comment Status* **D** *PD State Diagram*
Variable is renamed from pse_dll_power_type to pse_dll_power_level,
but it describes the type of the PSE connected.
pse_dll_power_type is a more apt name.

SuggestedRemedy
Rename pse_dll_power_level to pse_dll_power_type or to pse_dll_type

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

Leave name as pse_dll_power_level

Change description to: "A control variable output by the PD power control state diagram
(Figure 33-3) that indicates the power level of the PSE by which the PD is being powered.

Values: 1: The PSE is delivering class 3 power or less.
2: The PSE is delivering class 4 power.
3: The PSE is delivering class 5 or class 6 power.
4: The PSE is delivering class 7 or class 8 power.

Cl **33** *SC* **33.2.5.1** *P* **44** *L* **25, 4** # 92
Yseboodt, Lennart Philips

Comment Type **E** *Comment Status* **D** *PSE Detection*
Figure numbers 33-1 and 33-2 are incorrect, also references to them incorrect.

SuggestedRemedy
Figure 33-1 => Figure 33-11
Figure 33-2 => Figure 33-12

References to fix:
Lines: 10, 29 and 44/45

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

EZ

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

Comment ID **92**

Page 23 of 38
5/13/2015 12:55:29 PM

Cl **33**   *SC* **33.3.3.4a**   *P* **69**   *L* **8**   # 93

Yseboodt, Lennart   Philips

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

Bad reference to Table 33-7

SuggestedRemedy

Table 33-7 => Table 33-10

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment #56.

EZ

Cl **33**   *SC* **33.3.3.4a**   *P* **69**   *L* **12-1**   # 94

Yseboodt, Lennart   Philips

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

"Type 3 MPS: A control variable that indicates to the PD the Type of PSE to which it is
connected.
 This variable is used to indicate which MPS timing requirements (see 33.3.8) the PD
should use.
 Values:
TRUE: The PSE uses Type 3 MPS requirements.
FALSE: The PSE uses Type 1 MPS requirements."

Bad variable name. Type description incomplete.

SuggestedRemedy

"short_mps: A control variable that indicates to the PD the Type of PSE to which it is
connected.
 This variable is used to indicate which MPS timing requirements (see 33.3.8) the PD
should use.
 Values:
TRUE: The PSE uses Type 3, 4 MPS requirements.
FALSE: The PSE uses Type 1, 2 MPS requirements."

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

"short_mps: A control variable that indicates to the PD the Type of PSE to which it is
connected.
 This variable is used to indicate which MPS timing requirements (see 33.3.8) the PD
should use.
 Values:
TRUE: The PSE uses Type 3, 4 MPS timing requirements.
FALSE: The PSE uses Type 1, 2 MPS timing requirements."

Cl **33**   *SC* **33.3.8**   *P* **84**   *L* **24**   # 95

Yseboodt, Lennart   Philips

Comment Type **E**   *Comment Status* **D**   *PD MPS*

"The MPS is made up of current draw equal to or above Iport_MPS for a ..."

SuggestedRemedy

"The MPS consists of current draw equal to or above Iport_MPS for a ..."

Proposed Response   *Response Status* **W**

PROPOSED REJECT.

This is existing langauge and I believe it is clear enough.

Cl **33**   *SC* **33.3.8**   *P* **85**   *L* **1-4**   # 96

Yseboodt, Lennart   Philips

Comment Type **T**   *Comment Status* **D**   *PD MPS*

The note is only correct for PDs that draw Iport continuously.
PDs that make use of duty cycling will need to take measures also with smaller capacitors.
PDs that draw just Iport_mps with the minimum duty cycle (all types) also get in trouble
with even the smallest allowed Cport.

SuggestedRemedy

Replace note by:
PDs may not be able to meet the I Port_MPS specification in Table 33-19 during the
maximum allowed port
voltage droop (V Port_PSE max to V Port_PSE min with series resistance R Ch).
Such a PD should increase its I Port min or make other such provisions to meet the
Maintain
Power Signature.

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The note is informative and thus making it broader reaching is not a problem. I think it is a
good idea for PD designers to consider the effect of PSE behavior on their PD.

However, the 180uF number seems to work and I have not heard any issues with it in
implemenations that use pulsing.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **96**   Page 24 of 38
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   5/13/2015 12:55:29 PM
SORT ORDER: Comment ID

Cl **33** *SC* **33.3.1** *P* **65** *L* **6** # 97
Yseboodt, Lennart Philips

Comment Type **E** *Comment Status* **D** *PD PI*
In Table 33-13, conductor 2, mistyped Positive V_p

SuggestedRemedy
Replace by "Positive V_PD"

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

EZ

Cl **33** *SC* **33.3.2** *P* **66** *L* **12** # 98
Yseboodt, Lennart Philips

Comment Type **T** *Comment Status* **D** *PD Power*
Line 9 says: The maximum power a PD expects to draw from a PSE is P Class_PD max as
defined in Table 33-18.
Purpose of this statement is unclear. If the reference point is the PSE, then the power is
Pclass.
If the reference point is the PD PI, the it is Pclass_pd for class 0-5 & 7 and Pclass for
classes 6 and 8.

SuggestedRemedy
Remove altogether or replace by:
The maximum power a PD expects to draw from a PSE is P_Class at the PSE PI as
defined in Equation 33-3 and Table 33-7.

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

Remove this sentence. This information is covered in Table 33-18 and section 33.3.7.2.

Cl **33** *SC* **33.2.6** *P* **49** *L* **8** # 99
Yseboodt, Lennart Philips

Comment Type **E** *Comment Status* **D** *PSE Classification*
Table 33-8, Type 2, Physical Layer Classification column, first cell says "2-Event".
Should be "Multiple-Event".

SuggestedRemedy
Replace "2-Event" by "Multiple-Event".

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

Possible OBE by comment # 112.

EZ

Cl **33** *SC* **33.3.7** *P* **78** *L* **15-1** # 100
Yseboodt, Lennart Philips

Comment Type **T** *Comment Status* **D** *PD Power*
PD Powers can now be calculated from Pclass.

SuggestedRemedy
Class 5: 39.9W Pclass_pd(max)
Class 6: 51.0W Pclass_pd(max)
Class 7: 62.0W Pclass_pd(max) (note: rounded up by 1.6mW)
Class 8: 71.3W Pclass_pd(max) (note: rounded up by 22.3mW)

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

OBE by comment # 24.

EZ

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

Comment ID **100**

Page 25 of 38
5/13/2015 12:55:29 PM

Cl **33** *SC* **33.2.7** *P* **54** *L* **9** # 101

Yseboodt, Lennart   Philips

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

Per Table 33-11: Type 3,4 PSE must deliver 0.5*Pclass / Vport_PSE-2P.
In case the the PSE power over 2P then Icon-2P is off by factor 2.

SuggestedRemedy

Split Type 3,4 up into Type 3,4 in 2P mode and Type 3,4 in 4P mode.
The 2P mode: Icon-2p(min) = Pclass / VPort_PSE-2P
The 4P mode: Icon-2p(min) = 0.5*Pclass / VPort_PSE-2P

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Only Type 3 can act in 2P mode.

Split Type 3 up into Type 3 in 2P mode and Type 3 in 4P mode.
The 2P mode: Icon-2p(min) = Pclass / Vport_PSE-2P
The 4P mode: Icon-2p(min) = 0.5*Pclass / Vport_PSE-2P

Cl **33** *SC* **33.2.8** *P* **61** *L* **52** # 102

Yseboodt, Lennart   Philips

Comment Type **T** *Comment Status* **D**   *PSE Power*

"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."
This is open for misinterpretation: the power 'requested by the PD' can be higher than the
maximum power of
the PDs class due to power demotion.

SuggestedRemedy

A PSE does not initiate power provision to a link if the PSE is unable to provide the
maximum power level
of the PDs assigned class.

Proposed Response *Response Status* **W**

Cl **33** *SC* **33.3.7** *P* **77** *L* **27-3** # 103

Yseboodt, Lennart   Philips

Comment Type **T** *Comment Status* **D**   *PD Power*

The minimum input voltage for a PD VPort_PD-2P(min) is based on the highest power
class of the Type.
PDs in Class 1,2,5 and 7 will never see a voltage as low as currently specified.
Hence their design calls for an input voltage operating window that is unnecessarily wide.
Also, the PD Type alone does not determine the minimum input voltage: eg. a Type 3
PD/15W can still
get a 37.0V input voltage from a Type 1 PSE.

SuggestedRemedy

Base minimum PD voltage on PD assigned class rather than Type.
VPort_PD-2P(min) =
Class 1: 42.2V
Class 2: 40.8V
Class 3: 37.0V
Class 4: 42.5V
Class 5: 44.4V
Class 6: 42.5V
Class 7: 43.0V
Class 8: 41.2V

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Interesting idea…would like to hear the group's opinion.

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

Comment ID **103**   Page 26 of 38
5/13/2015 12:55:29 PM

Cl **33** *SC* **33.3.1** *P* **64** *L* **38** # 104

Yseboodt, Lennart   Philips

Comment Type **T** *Comment Status* **D**   *PD PI*

The term pair-set is only defined for the PSE, but also used and valid for a PD.

SuggestedRemedy

Insert "A pair-set in a PD refers to either of the conductor sets." after "The two conductor sets are named Mode A and Mode B."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

We agreed in the last comment cycle to add the definition of pair-set to section clause 1.4.

Section 1.4 was not updated accordinly in D0.4.

We accepted "pair-set" and its definition as referring to either of the two valid 4-wireconnections as
listed in 33.2.3.

Do we need this if the definition exists? Yes, maybe for clarification

---

Cl **33** *SC* **33.3.1** *P* **64** *L* **38** # 105

Yseboodt, Lennart   Philips

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

"The PD shall be capable of accepting power on either or both of two sets of PI conductors."
This statement is valid for Type 1 & Type 2.
Type 3 and 4 PDs are required to support 4P power.
This text should be in line with Table 33-13a and we should use the term pair-set.

SuggestedRemedy

Replace line by:
Type 1 and Type 2 PDs shall be capable of accepting power on either or both pair-sets.
Type 3 and Type 4 PDs shall be capable of accepting power on either and both pair-sets.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Are we adding a requirement to Type 1 and Type 2 PDs (they were only required to accept power on either pair-set, we have added both)?

What is the difference between "either or both" and "either and both"?

Cl **33** *SC* **33.3.2** *P* **65** *L* **33** # 106

Yseboodt, Lennart   Philips

Comment Type **TR** *Comment Status* **D**   *PD Types*

Table 33-13a, column DLL classification, Type 1 / 13W row, content = "May be".
Strange formulation, optional would be more apt.

SuggestedRemedy

Replace "May be" with "Optional".
See replacement table suggestion in yseboodt_D04_Table_33-13a_v100.pdf

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Possible OBE by comment # 109

make change if comment #109 is not resolved with a change to this text.

EZ

Cl **33** *SC* **33.3.2** *P* **65** *L* **37** # 107

Yseboodt, Lennart   Philips

Comment Type **T** *Comment Status* **D**   *PD Types*

Table 33-13a, column DLL classification, Type 3 / 13W row, content = "Yes".
There is no reason for a Type 3 13W (Class 3 max) PD to have mandatory DLL support.

SuggestedRemedy

Replace "Yes" by "Optional" in the column "Data Link Layer Classification",
row "Type 3, 13W".
See replacement table suggestion in yseboodt_D04_Table_33-13a_v100.pdf

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Possible OBE by comment # 109

make change if comment #109 is not resolved with a change to this text.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general *Comment ID* **107** Page 27 of 38
COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed Z/withdrawn 5/13/2015 12:55:29 PM
SORT ORDER: Comment ID

Cl **33**   *SC* **33.3.2**   *P* **66**   *L* **4-10**   # 108

Yseboodt, Lennart   Philips

Comment Type **T**   *Comment Status* **D**   *PD Types*

"Type 3 PDs operating up to a max power draw corresponding to Class 3 or less implement both 1-Event
Physical Layer Classification and Data Link Layer classification (see 33.6) and advertise a 1-Event class
signature of 0,1,2, or 3."

There is no reason for a Type 3 13W (Class 3 max) PD to require DLL support.

SuggestedRemedy

"Type 3 PDs operating up to a max power draw corresponding to Class 3 or less implement a minimum of
1-Event Physical Layer classification and advertise a 1-Event class signature of 0, 1, 2, or 3.

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Agree. Class 0-3 PDs should not be required to support LLDP.

Cl **33**   *SC* **33.3.2**   *P* **65**   *L* **-**   # 109

Yseboodt, Lennart   Philips

Comment Type **T**   *Comment Status* **D**   *PD Types*

Table 33-13a lists the maximum PD power, but for Type 3 (51W) and Type 4 (71.3W) it does
not take extended power into account.

SuggestedRemedy

Possible solutions:
Replace power values with a "Highest Class" column (preferred).
That column would look like
 PD Class
 * 0-3
 * 4
 * 0-3
 * 4 (line removed)
 * 4-6
 * 7-8
 See replacement table suggestion in yseboodt_D04_Table_33-13a_v100.pdf

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

Classes are a better way to refer to power levels. The actual power levels should only be referred to once (Pclass_pd)

Cl **33**   *SC* **33.2.6**   *P* **47**   *L* **30-3**   # 110

Yseboodt, Lennart   Philips

Comment Type **E**   *Comment Status* **D**   *PSE Classification*

"Alternatively, PSE implementations may use V PSE = V Port_PSE-2P min and R Chan = R Ch max when powering
using two-pairs, or R Chan = R Ch max/2 when powering using four-pair ***systems and***
to arrive at over-
margined values as shown in Table 33‑4."

Issue 1: ***systems and*** should be removed.
Issue 2: R_Ch max is redundant. R_Ch is the maximum DC loop resistance of a pairset.

SuggestedRemedy

1: remove "and"
2: change Rch max to Rch

"Alternatively, PSE implementations may use V_PSE = V_Port_PSE-2P min and R_Chan = R_Ch when powering
using two-pairs, or R_Chan = R_Ch/2 when powering using four-pairs to arrive at over-
margined values as shown in Table 33‑4."

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

EZ

Cl **33**   *SC* **33.1.4**   *P* **22**   *L* **10**   # 111

Yseboodt, Lennart   Philips

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

Table 33-1 lists the "Channel Pair-set maximum DC loop resistance" parameter name as "Rchan".
This is not correct, Rchan is the actual DC loop resistance in a system.

SuggestedRemedy

What is meant is Rch. In 802.3-2012 this parameter was also called Rch.
Replace Rchan by Rch.

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

EZ

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

Comment ID **111**   Page 28 of 38
5/13/2015 12:55:29 PM

Cl **33**   *SC* **33.2.6**   *P* **48-49**   *L* **-**   # 112
Yseboodt, Lennart   Philips

Comment Type **E**   *Comment Status* **D**   *PSE Classification*
Table 33-8 PSE and PD classification permutations is unduly difficult to read.

SuggestedRemedy
Replacement table suggested in yseboodt_d04_Table_33_8_v100.pdf
Content of the table identical to the one in D0.4

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

Need document referenced in suggested remedy.

Cl **33**   *SC* **33.1.4**   *P* **22**   *L* **23**   # 113
Yseboodt, Lennart   Philips

Comment Type **E**   *Comment Status* **D**   *Cabling*
Footnote 2 below Table 33-1
"In Type 3, 60W Operation, the current per pair-set might be impacted by pair to pair
system resistance unbalance."
Better to refer to class.

SuggestedRemedy
"In Type 3, Class 6 Operation, the current per pair-set might be impacted by pair to pair
system resistance unbalance."

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

OBE by comment #12.

EZ

Cl **33**   *SC* **33.1.4**   *P* **22**   *L* **21**   # 114
Yseboodt, Lennart   Philips

Comment Type **T**   *Comment Status* **D**   *Cabling*
Icable for Type 4 is TBD.

SuggestedRemedy
We have adopted 99.9W as the maximum allowed Ptype.
Icable = (99.9W / 52V) / 2 = 0.960 A (+footnote ref 3)
3: "In Type 4, Class 8 Operation, the current per pair-set might be impacted by pair to pair
system resistance unbalance."

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

Possible OBE by comment #11.

Partial OBE by comment #12.

Cl **33**   *SC* **33.1.1**   *P* **19**   *L* **52**   # 115
Yseboodt, Lennart   Philips

Comment Type **TR**   *Comment Status* **D**   *Cabling*
Reference to ISO/IEC 11801:1995.
In other parts of Clause 33 we refer to ISO/IEC 11801:2002 for channel parameters.
ISO/IEC 11801:1995 has been withdrawn by ISO.

SuggestedRemedy
Change ISO/IEC 11801:1995 to ISO/IEC 11801:2002

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

EZ

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn
SORT ORDER: Comment ID   *Comment ID* **115**   Page 29 of 38
5/13/2015 12:55:29 PM

Cl **33** *SC* **33.1.4** *P* **22** *L* **15-1** # 116
Yseboodt, Lennart Philips

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

Reference to ISO/IEC 11801:1995.
In other parts of Clause 33 we refer to ISO/IEC 11801:2002 for channel parameters.
ISO/IEC 11801:1995 has been withdrawn by ISO.

SuggestedRemedy

Change ISO/IEC 11801:1995 to ISO/IEC 11801:2002

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

EZ

Cl **33** *SC* **33.2.3** *P* **31** *L* **1** # 117
Yseboodt, Lennart Philips

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

"A PSE device may provide power via one of two valid four-wire connections."
Forbids 4P power.

SuggestedRemedy

"A PSE device may provide power via one or both of two valid four-wire connections."
or
"A PSE device may provide power via at least one of two valid four-wire connections."
or
"A PSE device may provide power via one or two valid four-wire connections."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace text with "A PSE device may provide power via one or both of two valid four-wire connections."

EZ

Cl **33** *SC* **33.2.4.1** *P* **32** *L* **20-2** # 118
Yseboodt, Lennart Philips

Comment Type **E** *Comment Status* **D** *PSE Detection*

"A Type 3 or Type 4 PSE that is capable of delivering power over both Alternative A and Alternative B simultaneously is not required to meet backoff algorithm."
'the' misses between meet and backoff

SuggestedRemedy

"A Type 3 or Type 4 PSE that is capable of delivering power over both Alternative A and Alternative B simultaneously is not required to meet the backoff algorithm."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

EZ

Cl **33** *SC* **33.2.6** *P* **48-49** *L* **-** # 119
Yseboodt, Lennart Philips

Comment Type **E** *Comment Status* **D** *PSE Classification*

Table 33-8 is incorrectly broken up over pages 48 and 49.

SuggestedRemedy

Close table on page 48.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Possibly OBE by comment # 112.

EZ

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

Comment ID **119**

Page 30 of 38
5/13/2015 12:55:29 PM

Cl **33**　　*SC* **33.2.4.5**　　　　*P* **40**　　*L* **19-2**　　# 120
Yseboodt, Lennart　　　　　　　Philips

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

"When a PSE powers a PD of a lower Type than its maximum capability, the PSE
shall meet the PI electrical requirements of PSE Type that matches the PD Type, but may
choose to meet the electrical requirements of a greater Type (up to its maximum capability)
for I Con-2P , I LIM-2P , T LIM-2P , and P Type (see Table 33â€"11)."

Unclear and grammatically dubious sentence.

SuggestedRemedy

When a PSE powers a PD of a lower Type than its own, the PSE shall meet the PI
electrical requirements
of the PSE Type that corresponds to the connected PD Type.
The PSE may choose to apply the requirements for
I Con-2P , I LIM-2P , T LIM-2P and P Type (see Table 33â€"11) of any Type smaller or
equal than the
PSE Type and larger or equal than the PD Type.

Proposed Response　　　*Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Type and power are not directly related and this needs further study (as the editor's note is
there to remind us).

Cl **33**　　*SC* **33.2.6**　　　　*P* **48**　　*L* **12**　　# 121
Yseboodt, Lennart　　　　　　　Philips

Comment Type **T**　　*Comment Status* **D**　　　　*PSE Classification*

In Table 33-7, for Class 4, the Number of Classification Events is listed as 2.
It is also possible for a PSE to produce 3 classification events and this also results in Class
4 power.

SuggestedRemedy

Replace "2" by "2 or 3"

Proposed Response　　　*Response Status* **W**

Cl **33**　　*SC* **33.6.3.2**　　　　*P* **106**　　*L* **13-1**　　# 122
Yseboodt, Lennart　　　　　　　Philips

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

PSE_INITIAL_VALUE is still TBD for Class 5 and up. Can now be filled out since PD
powers are known.

SuggestedRemedy

PSE_INITIAL_VALUE =
mr_pd_class_detected　5　399
mr_pd_class_detected　6　510
mr_pd_class_detected　7　620
mr_pd_class_detected　8　713

Proposed Response　　　*Response Status* **W**

PROPOSED ACCEPT.

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

Comment ID **122**　　　Page 31 of 38
5/13/2015 12:55:29 PM

Cl **33**   *SC* **33.2.7.7**   *P* **59**   *L* **19-2**   # 123

Yseboodt, Lennart   Philips

Comment Type **T**   *Comment Status* **D**   *PSE Power*

"A PSE may remove power from a pair-set of a PI if the pair-set current..."

In case a PD is drawing too much current, this can double the shutdown time.
First one pairset exceeds, and gets disconnected after Tlim.
Then the full current of the PD gets transferred to the other pairset, which also goes
down after Tlim. Total shutdown time is doubled.

Some textual clarifications added + distinction between single and dual signature PD.

SuggestedRemedy

"A PSE may remove power from both pair-sets of a PI if any pair-set current meets or
exceeds the 'PSE lowerbound template'
in Figure 33-14, when connected to a single signature PD.
A PSE may remove power from a pair-set of a PI if its pair-set current meets or exceeds
the 'PSE lowerbound template'
in Figure 33-14, when connected to a dual signature PD.
Power shall be removed from both pair-sets of a PI before any pair-set current exceeds the
'PSE upperbound template' in Figure 33-14,
when connected to a single signature PD.
Power shall be removed from a pair-set of a PI before its pair-set current exceeds the 'PSE
upperbound template' in Figure 33-14,
when connected to a dual signature PD."

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

I think we can simplify this…

SS: may remove power from both if lower template exceeded, shall remove power from
both if upper template exceeded.

DS: may remove power from the pair-set or both if lower template exceeded, shall remove
from the pair-set or both if upper template exceeded.

Cl **33**   *SC* **33.3.8**   *P* **84**   *L* **40**   # 124

Yseboodt, Lennart   Philips

Comment Type **E**   *Comment Status* **D**   *PD MPS*

Reference to Zac2 in Table 33-1.
This should be Table 33-12, but note, Table 33-12 is erroneously listed as Table 33-1.
See other comment on this.

SuggestedRemedy

Change reference to Table 33-12.

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

EZ

Cl **33**   *SC* **33.3.7**   *P* **78**   *L* **45-4**   # 125

Yseboodt, Lennart   Philips

Comment Type **T**   *Comment Status* **D**   *PD Power*

Items 8 and 9, Input current transient and PI capacitance are only listed for Type 1 and 2.

SuggestedRemedy

Add extra lines for Type 3 and 4 with TBD.

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

EZ

Cl **33**   *SC* **33.3.7**   *P* **78**   *L* **45-4**   # 126

Yseboodt, Lennart   Philips

Comment Type **T**   *Comment Status* **D**   *PD Power*

Item 11, Von/Voff only listed for Type 1 and 2.

SuggestedRemedy

Add extra lines for Type 3 and 4 with TBD.

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

EZ

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **126**   Page 32 of 38
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   5/13/2015 12:55:29 PM
SORT ORDER: Comment ID

Cl **33** *SC* **33.4.9.1.2** *P* **96** *L* **33-3** # 127
Yseboodt, Lennart   Philips

Comment Type **E** *Comment Status* **D**   *AES*
"For 10GBASE-T operation, insertion loss for **Mispan** PSE devices shall meet the values determined by
Equation (33-19a) when measured **fro** the **trasmit** and receive pairs from 1 MHz to 500 MHz."

SuggestedRemedy
Mispan -> Midspan
fro -> from
trasmit -> transmit

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

EZ

Cl **33** *SC* **33.4.9.1.3** *P* **97** *L* **1** # 128
Yseboodt, Lennart   Philips

Comment Type **E** *Comment Status* **D**   *AES*
Table "Connector return loss" should be numbered Table 33-20.

SuggestedRemedy
Replace Table 33-1 by Table 33-20.

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

EZ

Cl **33** *SC* **33.4.9.1.3** *P* **96** *L* **50** # 129
Yseboodt, Lennart   Philips

Comment Type **E** *Comment Status* **D**   *AES*
Reference to Table 33-1 wrong.

SuggestedRemedy
Replace Table 33-1 by Table 33-20.

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

EZ

Cl **33** *SC* **33.2.9.1.1** *P* **62** *L* **30-3** # 130
Yseboodt, Lennart   Philips

Comment Type **E** *Comment Status* **D**   *PSE MPS*
Reference to Table 33-1 wrong.

SuggestedRemedy
Replace Table 33-1 by Table 33-12.

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

EZ

Cl **33** *SC* **33.2.9.1.2** *P* **64** *L* **18** # 131
Yseboodt, Lennart   Philips

Comment Type **E** *Comment Status* **D**   *PSE MPS*
Reference to Table 33-1 wrong.

SuggestedRemedy
Replace Table 33-1 by Table 33-12.

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

EZ

Cl **33** *SC* **33.3.2** *P* **66** *L* **4-8** # 132
Yseboodt, Lennart   Philips

Comment Type **E** *Comment Status* **D**   *PD Types*
'Max power' should be 'Maximum power' (two instances)

SuggestedRemedy
Replace 'Max power' by 'Maximum power'

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

EZ

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed Z/withdrawn
SORT ORDER: Comment ID   *Comment ID* **132** Page 33 of 38
5/13/2015 12:55:29 PM

Cl **33**　　*SC* **33.6.3.3**　　　　*P* **108**　　*L* **38-4**　　# 133
Yseboodt, Lennart　　　　　　　Philips

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

'Max power' should be 'Maximum power' (two instances)

SuggestedRemedy

Replace 'Max power' by 'Maximum power'

Proposed Response　　　*Response Status* **W**

PROPOSED ACCEPT.

EZ

Cl **33**　　*SC* **33.3.2**　　　　*P* **66**　　*L* **10**　　# 134
Yseboodt, Lennart　　　　　　　Philips

Comment Type **T**　　*Comment Status* **D**　　　　　*PD Classification*

"Type 3 and Type 4 PDs operating with a max 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, or 7."

Class 8 missing.

SuggestedRemedy

"Type 3 and Type 4 PDs operating with a max 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."

Proposed Response　　　*Response Status* **W**

PROPOSED ACCEPT.

EZ

Cl **33**　　*SC* **33.3.5.1**　　　　*P* **74**　　*L* **14**　　# 135
Yseboodt, Lennart　　　　　　　Philips

Comment Type **T**　　*Comment Status* **D**　　　　　*PD Classification*

"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, 5, 6 , or 7 respond to 1-Event classification with a Class 4 signature.

Class 8 missing.

SuggestedRemedy

"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, 5, 6, 7, or 8 respond to 1-Event classification with a Class 4 signature."

Proposed Response　　　*Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

"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 or higher respond to 1-Event classification with a Class 4 signature."

EZ

Cl **33**　　*SC* **33.3.3.3**　　　　*P* **68**　　*L* **34**　　# 136
Yseboodt, Lennart　　　　　　　Philips

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

"4: The PSE is delivering the PD's requested power or Class 7 power, whichever is less."

Should be Class 8.

SuggestedRemedy

"4: The PSE is delivering the PD's requested power or Class 8 power, whichever is less."

Proposed Response　　　*Response Status* **W**

PROPOSED ACCEPT.

EZ

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

Comment ID **136**　　　Page 34 of 38
5/13/2015 12:55:29 PM

Cl **33**   *SC* **33.4.9.13**   *P* **97**   *L* **5**   # 137

Shariff, Masood   CommScope

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

Connector RL is not correct for Category 5 connectors.

SuggestedRemedy

Use the following for the first row:

10/100/1000BASE-T 1 MHz <=f <= 31.5 MHz   30 dB
               20 MHz < f <= 100 MHz   20 - 20 log(f/100)

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Need expert opinion…

Cl **33**   *SC* **33.2.7**   *P* **54**   *L* **12**   # 138

Darshan, Yair   Microsemi

Comment Type **ER**   *Comment Status* **D**   PSE Unbalance

Table 33-11 item 4a:
We need to remeber that Icont-2P-unb for extended power will be higher than what what specified in Table 33-11 item 4. It will be adressed in seperate work and will required two new row in Table 33-11 to defined the maximum Icont-2P_Ufor extended power.

In Extended power, Ppd at short cable will be higher than 51W (may be close to Ptype_min) and also the same case with Type 4.

We will need separate requirements for PD that want to use extended power were the burden will be on PD to limit P2P_Iunb and Ipeak PD_Peak power so total effect on current will be cost effective. This need more work.
At worst case we need to set Pclass_PD=Pclass(PSE) which I did already few month ago and waiting to finish first the typical use cases.

We have the results for extended power with the same system unbalance parameters used for the typical use cases:
Type 3: Icont-2P=600mA, Icont-2P_unb=Icable=773mA
Type 4: Icont-2P=865mA, Icont-2P_unb=Icable=1087mA.
This will need to be specified to allow transformer design at worst case condition after some new spec requirement for PD in order to reduce this numbers.
TIA will have to tell us regarding temperature rise if total 4P total current is 2*Icable 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 the other pair has the rest, if they expect increase in temperature rise. Based on mathematical work that I did, I expect that it will not affect temperature rise over the cable.

SuggestedRemedy

Add additirial note below Table 33-11 as follows:
[Editorial note: Icont-2P and Ipeak_2P need to be adressed for Extended power case were Pclass_PD is very close to Pclass. It will result with higher currents on the pair with minimum resistance but will not change the total 4P current. For the above parameters in extended power, we will have to add two new rows that will specify maximum current at this case. Total PSE power will not change]

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

EZ

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **138**   Page 35 of 38
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   5/13/2015 12:55:29 PM
SORT ORDER: Comment ID

Cl **33**   *SC* **33.1.4**   *P* **21**   *L* **50**   # 139
Jones, Chad   Cisco

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

Maintenance Request #1271, on behalf of GEOFF THOMPSON, GRACASI S.A./LINEAR TECHNOLOGY

Move as much of the cabling specification to cabling documents as possible. (This RR was entered as a tracking mechanism for Thompson Comment #59 against P802.3REVbx/D2.0 during initial WG ballot. Resolution of this comment was given over to P802.3bt as they will have Cl 33 open.)

SuggestedRemedy

See attached sheet for proposed new text.
(http://www.ieee802.org/3/maint/requests/maint_1271.pdf, page 2)

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

A number of these changes have already been adopted. The two remaining changes are:

Replacing the first sentence in 33.1.4 with:

"A power system, consists of a single PSE, a single PD and the link section connecting them. A power system is
characterized as Type 1 or Type 2 by lowest type number of the PSE or PD in the system, see Table 33–1."

and replacing the first paragraph of 33.1.4.1 with (as well as changing the title of the subclause to "Cabling requirements"):

"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 gauge conductors than are found in Class C/Category 3 cabling and (more uncommonly) in some lighter
gauge Class D or better cable. The requirements for Type 2 are met by Category 5 or better cable and components as
specified in ANSI/TIA/EIA-568-A."

Cl **33**   *SC* **33.1.4.1**   *P* **22**   *L* **41**   # 140
Jones, Chad   Cisco

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

Maintenance WG Ballot comment #59 on behalf of GEOFF THOMPSON, GRACASI S.A./LINEAR TECHNOLOGY

(through line 6, i.e. the first paragraph of 33.1.4.1)
Simplify the first paragraph by updating the reference to the 2002 version of 11801 which incorporates the additional requirement.

SuggestedRemedy

33.1.4.1 Cabling requirement
Operation requires Class D, or better, cabling as specified in ISO/IEC 11801:2002. These requirements are also met by Category 5e or better cable and components as specified in ANSI/TIA-568-C.2; or Category 5 cable and components as specified in ANSI/TIA/EIA-568-A.
The second paragraph of this clause can remain unchanged unless the referenced cabling documents already cover this material.

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT.

EZ

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

Comment ID **140**   Page 36 of 38
5/13/2015 12:55:29 PM

Cl **33**   *SC* **33.1.3**   *P* **21**   *L* **38**   # 141

Jones, Chad   Cisco

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

Maintenance Request #1273 on behalf of George Zimmerman, CME Consulting/LTC

Text in the existing standard is ambiguous and is inconsistent with the more precise definition in the definitions section. The imprecise language "generic term" does not point to a specific interface point necessary for the specifications attached to the PI, including a pin-out. In contrast the language in the definitions section is more precise.

SuggestedRemedy

Change: The Power Interface (PI) is the generic term that refers to the mechanical and electrical interface between the PSE or PD and the transmission medium.
To: The Power Interface (PI) is the mechanical and electrical interface between the Power Sourcing Equipment (PSE) or Powered Device (PD) and the transmission medium as defined in 1.4.324 (1.4.336 in P802.3bx/D2.0). In an Endpoint PSE and in a PD the Power Interface is the MDI as defined in 1.4.256 (1.4.268 in P802.3bx/D2.0)

Proposed Response   *Response Status*   **W**

PROPOSED ACCEPT.

EZ

Cl **33**   *SC* **33.3.1**   *P* **64**   *L* **53**   # 142

Jones, Chad   Cisco

Comment Type **T**   *Comment Status* **D**   *PD PI*

Maintenance Request #1274 on behalf of George Zimmerman, CME Consulting/LTC

Text in the existing standard is ambiguous and is inconsistent with terminations and usage commonly found in Ethernet equipment. The intent is to require PDs to be able to withstand application of common-mode PoE voltage. Application of 57V DC voltages in across the pins corresponding to the two pairs twisted differentially to form a balanced pair of the link segment would run a DC current across the transformer windings commonly found in BASE-T Ethernet equipment and burn them out.

SuggestedRemedy

Change: The PD shall withstand any voltage from 0 V to 57 V at the PI indefinitely without permanent damage.
To:The PD shall withstand any common-mode voltage from 0 V to 57 V applied to any two sets of two pins at the PI indefinitely without permanent damage. The two pins in each set shall correspond to the balanced twisted wire pairs of the connected link segment.

Proposed Response   *Response Status*   **W**

PROPOSED ACCEPT IN PRINCIPLE.

This should be clarified. Can we use the definition of pair-set make this simpler?

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

Comment ID **142**   Page 37 of 38
5/13/2015 12:55:29 PM

Cl **33**   *SC* **33.1.4.2**   *P* **23**   *L* **10**   # 143

Jones, Chad   Cisco

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

Maintenance WG Ballot comment #60 on behalf of GEOFF THOMPSON, GRACASI
S.A./LINEAR TECHNOLOGY

(through line 28, i.e. the entirety of 33.1.4.2)
The first sentence should be deleted. It would be appropriately handled by updating the
reference to 11801 to the 2002 edition which precisely matches this requirement with the
following text: 6.4.8 Direct current (d.c.) resistance unbalance
The d.c. resistance unbalance between the two conductors within each pair of a channel
shall not exceed 3 % for all classes. This shall be achieved by design.
The remainder of 33.1.4.2 should be deleted as it is purely informative/tutorial material on
cabling parameter measurement. It is more appropriate to the referenced cabling
documentation. If 802.3 strongly feels that it needs to be retained in our document then it
should be moved to an informative annex. (Ref: 2014 Style Manual, cl. 10.1, last paragraph)

SuggestedRemedy

With both of these actions being taken, the entire sub-clause should be deleted.

Proposed Response   *Response Status*   **W**

PROPOSED ACCEPT IN PRINCIPLE.

Move section (with appropriate changes) to informative annex.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **143**   Page 38 of 38
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed Z/withdrawn   5/13/2015 12:55:29 PM
SORT ORDER: Comment ID