

IEEE P802.3bt D1.2 4P PoE 5th Task Force review comments

Cl 1 SC 1.4 P97 L 17 # 212
 Dwelley, David Linear Technology

Comment Type TR Comment Status D Definitions

Page number is from 802.3bx D3.2

Definitions for Type 3 and Type 4 PDs and PSEs are missing.

SuggestedRemedy

Add definitions:

Type 3 PD: A PD that provides a Class 6 or lower signature during Physical Layer classification, understands multiple-Event classification, and is capable of Data Link Layer classification (see IEEE 802.3, Clause 33).

Type 3 PSE: A PSE that supports PD Types 1-3 and supports Low MPS.

Type 4 PD: A PD that provides a Class 7 or 8 signature during Physical Layer classification, understands multiple-Event classification, and is capable of Data Link Layer classification (see IEEE 802.3, Clause 33).

Type 4 PSE: A PSE that supports PD Types 1-4 and supports 4-pair power and Low MPS.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

These definitions aren't perfect, but should be included so people can comment on them.

Add definitions:

Type 3 PD: A PD that provides a Class 1 to Class 6 signature during Physical Layer classification, implements ****multiple-Event classification****, and accepts power on both Modes simultaneously (see IEEE 802.3, Clause 33).

Type 3 PSE: A PSE that supports PD Types 1-3 and supports Low MPS (see IEEE 802.3, Clause 33).

Type 4 PD: A PD that provides a Class 7 or 8 signature during Physical Layer classification, implements multiple-Event classification, is capable of Data Link Layer classification, and accepts power on both Modes simultaneously (see IEEE 802.3, Clause 33).

Type 4 PSE: A PSE that supports PD Types 1-4 and supports 4-pair power and Low MPS (see IEEE 802.3, Clause 33).

Cl 1 SC 1.4.425 P97 L 40 # 213
 Dwelley, David Linear Technology

Comment Type TR Comment Status D Pres: Dwelley

Page number is from 802.3bx D3.2

The Vpd and Vpse definitions in Clause 1 are 2-pair centric:

"1.4.425 VPD: The voltage at the PD PI measured between any conductor of one power pair and any conductor of the other power pair (see IEEE 802.3, Clause 33).
 1.4.426 VPSE: The voltage at the PSE PI measured between any conductor of one power pair and any conductor of the other power pair (see IEEE 802.3, Clause 33)."

SuggestedRemedy

Adjust to support 4-pair operation:

"1.4.425 VPD: The voltage at the PD PI measured between any conductor of a positive power pair and any conductor of the matching negative power pair (see IEEE 802.3, Clause 33).
 1.4.426 VPSE: The voltage at the PSE PI measured between any conductor of a positive power pair and any conductor of the matching negative power pair (see IEEE 802.3, Clause 33)."

Proposed Response Response Status W

PROPOSED ACCEPT.

Need to make sure these terms have not been changed to -2p.

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Cl 33 SC 33.1.4 P 198 L 26 # 43
 Maguire, Valerie Siemon

Comment Type ER Comment Status D Cabling

Missing TIA reference in 4 locations in Table 33-1.

SuggestedRemedy

For Type 1, change,

"Class D recommended"

to,

"Class D or Category 5 recommended"

For Type 2, change,

"Class D (ISO/IEC 11801:1995)"

to,

"Class D (ISO/IEC 11801:1995) or Category 5 (ANSI/EIA/TIA-568-A:1995)"

For Type 3, change

"Class D (ISO/IEC 11801:2002)"

to,

"Class D (ISO/IEC 11801:2002) or Category 5e (ANSI/TIA-568-B.2:2001)"

For Type 4, change

"Class D (ISO/IEC 11801:2002)"

to,

"Class D (ISO/IEC 11801:2002) or Category 5e (ANSI/TIA-568-B.2:2001)"

Proposed Response Response Status W

PROPOSED ACCEPT.

See comment 30.

Cl 33 SC 33.1.4 P 198 L 29 # 30
 Darshan, Yair Microsemi

Comment Type TR Comment Status D Cabling

Table 33-1, Cable Type for Type 3 and 4 systems.

If we agree that we want to work with cable installations that were specified for Type 2 with Type 3 and 4 systems then we need to use Class D (ISO/IEC 11801:1995) for Type 3 and 4 as well.

SuggestedRemedy

1. Change Minimum Cabling Type for Type 3 and 4 to Class D (ISO/IEC 11801:2002) or

Cabling experts to explain the differences between Class D (ISO/IEC 11801:2002) and Class D (ISO/IEC 11801:1995) for group to decide.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment 43

Cl 33 SC 33.1.4 P 198 L 32 # 268
 Jones, Chad Cisco

Comment Type T Comment Status X Cabling

Table 33-1, last row, last coulumn. We may need to adjust the cabling specs for Type 4 systems based on the regulations currently being drafted in the National Electric Code.

SuggestedRemedy

No change to suggest yet. Wanted a placeholder in the comment database to which to attach possible changes devised at the meeting.

Proposed Response Response Status W

Task Force to discuss

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Cl 33 SC 33.1.4.1 P 199 L 5 # 19
 Darshan, Yair Microsemi

Comment Type T Comment Status X Cabling

This is my response to comment #4 in D1.1 per Maintenance Request #1271, on behalf of GEOFF THOMPSON, GRACASI S.A./LINEAR TECHNOLOGY. I was asked to review it and submit my response. Due to the fact that part of the requested is already implemented in clause 33.1.4, I will address only the comment part that addresses clause 33.1.4.1

SuggestedRemedy

Replace lines 5-12 in page 199 clause 33.1.4.1 from:
 "Type 1 power levels may be transmitted over all specified premises cabling that meets the requirements specified in Table 33-1. Type 2 operation requires Class D, or better, cabling as specified in ISO/IEC 11801:1995, with the additional requirement that channel DC loop resistance shall be 25 .. or less. 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. Type 3 and Type 4 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."

To:

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."

Proposed Response Response Status W

Task Force to discuss.

Cl 33 SC 33.2.0a P 200 L 45 # 269
 Jones, Chad Cisco

Comment Type T Comment Status X Pres: Types

Table 3301a. Comment #72 in D1.1 made some unintended changes that cause problems. The second column simply states "maximum class supported" and states Class 8. Join this with the information in Table 33-3 on page 214 that states Type 4 can have class_num_events, of 1,2,4,5 and this implies that we can make a Type 4 Class 0-3 system. The desire to bring the new features invented for 802.3bt to legacy systems is handled by allowing Type 3 systems class_num_events of 1,2,4. extending this to Type 4 causes a couple of problems:

1. we now have two OPTIONS for new Class 0-3 systems and three total OPTIONS for Classes 0-3 systems. to quote Geoff: options bad, standards good.
2. allowing a Type 4 Class 0-3 system implies that you can extend the 'improvements' made to T4 to these lower power systems; for instance, a single polarity PSE. We are already aware of some problems with legacy devices.

The improvements for Type 4 are easily defended for a high power, engineered system but not so easily defended for the low power systems, (see MDI/MDIX addition required in AF to gain WG approval).

SuggestedRemedy

Undo the changes made from comment #72 in D1.1. At a minimum, change Table 33-3 on page 214, line 39, Type 4 class_num_events from "1,2,4,5" to "5"

Proposed Response Response Status W

Wait for presentaiton

Cl 33 SC 33.2.4.3 P 209 L 23 # 251
 Dove, Daniel Dove Networking Solut

Comment Type TR Comment Status X Pres: SD

Type 3 and Type 4 PSEs will use Pairset Controllers and this should be identified early in the constant descriptions.

SuggestedRemedy

Modify as follows; "The PSE and Pairset Control state diagrams use the following constants. For Type 3 and Type 4 PSEs, each pairset controller will maintain a local copy of each constant"

Proposed Response Response Status W

Wait for PSE State Diagram Presentations

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CI 33 SC 33.2.4.4 P 209 L 36 # 253
 Dove, Daniel Dove Networking Solut

Comment Type **TR** Comment Status **X** Pres: SD

New variables to be added

SuggestedRemedy

Insert the following; "PS_Det_Fail_A This variable provides an indication from the Pairset A controller that a failure to detect has occurred. PS_Det_Fail_B This variable provides an indication from the Pairset B controller that a failure to detect has occurred.Values: True: The pairset controller has timed out when attempting detection.False: The pairset controller has not timed out when attempting detection."

Proposed Response Response Status **W**

Wait for presentation

CI 33 SC 33.2.4.4 P 209 L 44 # 250
 Dove, Daniel Dove Networking Solut

Comment Type **ER** Comment Status **X** Pres: SD

Additional Text required

SuggestedRemedy

Insert the following: "For Type 3 and Type 4 PSEs, the PI will consist of either an Alt-A pairset, an Alt-B pairset, or both Alt-A and Alt-B pairsets being controlled by pairset controllers. The pairset controller will utilize timers, variables and functions defined in this subclause as either a single controller, or as two controllers using local instances of each timer, variable and/or function."

Proposed Response Response Status **W**

Wait for presentation

CI 33 SC 33.2.4.4 P 209 L 49 # 254
 Dove, Daniel Dove Networking Solut

Comment Type **TR** Comment Status **X** Pres: SD

PD_4pair_candidate no longer required

SuggestedRemedy

Replace PD_4pair_Candidate with PD_Alt, replace the sentence "This variable is a function of the results of detection, connection_check and an additional 4PID method" with "This variable is a result of the function do_PD_Check." Under Values, delete the text for False and True, and Insert the following; "A: The PD is a candidate for accepting power on Alt-A B: The PD is a candidate for accepting power on Alt-B Both: The PD is a candidate for accepting power on both Alt-A and Alt-B simultaneously"

Proposed Response Response Status **W**

wait for presentation

CI 33 SC 33.2.4.4 P 212 L 52 # 255
 Dove, Daniel Dove Networking Solut

Comment Type **TR** Comment Status **X** Pres: SD

Need to add variables to address pairset operation as independent for each pairset controller.

SuggestedRemedy

Add: mr_ps_enable:
 A control variable that selects Pairset operation and test functions. This variable is provided by a management interface that may be mapped to the PSE Control register PS Enable A, or PS Enable B bits (11.9 and 11.8 respectively), as described below, or other equivalent functions.

Values: True - The pairset function is defined by PSE Control register bits 1:0
 False - The pairset function is disabled

Proposed Response Response Status **W**

Wait for presentation

CI 33 SC 33.2.4.4 P 213 L 4 # 256
 Dove, Daniel Dove Networking Solut

Comment Type **TR** Comment Status **X** Pres: SD

pi_powered should either be a local PS_Controller variable, or we need to have one for each pairset. For instance, one pairset may be unpowered, while the other is powered.

SuggestedRemedy

replace "PSE" with "pairset controller". I believe that this (replacing PSE with pairset controller) is going to be needed in multiple locations.

Proposed Response Response Status **W**

Wait for presentation

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Cl 33 SC 33.2.4.4 P 214 L 52 # 139
 Yseboodt, Lennart Philips

Comment Type **TR** Comment Status **X** Pres: Types

Topic: Type 4 classrange
 "Type 3 and Type 4 PSEs shall issue no more class events than the class they are capable of supporting. For example, this would apply to a PSE that is oversubscribed and in power management mode or a Type 3 PSE that has a hardware limitation."

Also applies to Type 4.

SuggestedRemedy

"Type 3 and Type 4 PSEs shall issue no more class events than the class they are capable of supporting. For example, this would apply to a PSE that is oversubscribed and in power management mode or a Type 3 or Type 4 PSE that has a hardware limitation."

Proposed Response Response Status **W**

Need outcome of comment 269.

Cl 33 SC 33.2.4.5 P 215 L 2 # 257
 Dove, Daniel Dove Networking Solut

Comment Type **TR** Comment Status **X** Pres: SD

We need to add tcc2det_timer into this subclause.

SuggestedRemedy

Add tcc2det_timer for state diagram to start, stop and/or identify when the timer is done.
 Defined as:
 Add tcc2det_timer for state diagram to start, stop and/or identify when the timer is done.
 Defined as:
 tcc2det_timer - A timer used to limit the duration from connection_check function being performed until detection function is started

Proposed Response Response Status **W**

Wait for Presentation.

Cl 33 SC 33.2.4.6 P 217 L 10 # 258
 Dove, Daniel Dove Networking Solut

Comment Type **TR** Comment Status **X** Pres: SD

The values for the do_detection function don't align with my proposed pair-set control approach. Each detection is done by the pairset controller, thus only a single pairset is under consideration. This returns the function results to their original values.

SuggestedRemedy

delete Valid_A, Valid_B and Valid_AB references.

Proposed Response Response Status **W**

Wait for presentation.

Cl 33 SC 33.2.4.6 P 218 L 5 # 97
 Yseboodt, Lennart Philips

Comment Type **ER** Comment Status **D** Editorial

"... for which the PSE shall select to meet the requirements of its Type or a less Type such that, Type PD <= PSE Type <= Type PSE."

Can be more compact/clear + fix spelling mistake.

SuggestedRemedy

"... for which the PSE shall select to meet the requirements of any Type such that Type_PD <= applied Type <= Type_PSE."

Request to editor: the paragraph has so many strikeouts, readability is poor. Delete paragraph and insert a fresh one.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

Cl 33 SC 33.2.4.6 P 218 L 5 # 114
 Yseboodt, Lennart Philips

Comment Type **T** Comment Status **D** Pres: Yair3

"... except for I Con-2P, I LIM-2P, T LIM-2P, and P Type (see Table 33-11), for which the PSE shall select to meet ..."

Type 3/4 PSEs are (currently, D1.2) required to support "360uF" worth of inrush unconditionally when powering over 4P. We are likely to adopt that this will become
 - "180uF" for Type 3
 - "360uF" for Type 4

It makes sense to give Type 4 PSEs (which may be restricted to lower classes) the option to support the lower inrush if they are powering (or are only capable of) lower Type PDs.

SuggestedRemedy

"... except for I Con-2P, I LIM-2P, linrush, linrush-2P, T LIM-2P, and P Type (see Table 33-11), for which the PSE shall select to meet ..."

Proposed Response Response Status **W**

PROPOSED ACCEPT IN PRINCIPLE.

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Cl 33 SC 33.2.4.6 P 218 L 104 # 259
 Dove, Daniel Dove Networking Solut

Comment Type TR Comment Status X Pres: SD

Based on the latest proposal for the state diagram, we need to add a function called do_PD_check.

SuggestedRemedy

Insert the following; do_PD_check_
 This function initiates the PD_check in Section 33.2.5.0b. This function returns the following variable:

PD_Alt: This variable indicates which pairsets are to be considered a candidate for accepting power from the PSE.

Values:

- A - The PD is a candidate for receiving power on the Alt-A pairset.
- B - The PD is a candidate for receiving power on the Alt-B pairset.
- Both - The PD is a candidate for receiving power on both the Alt-A and Alt-B pairsets simultaneously.

Proposed Response Response Status W

Wait for presentation

Cl 33 SC 33.2.4.7 P 221 L 1 # 260
 Dove, Daniel Dove Networking Solut

Comment Type TR Comment Status X Pres: SD

The latest proposal for the Type 3 and Type 4 PSE State Diagram includes a higher-level hierarchical drawing, and an approach where each pairset is controlled independently for the case of a dual-signature PD, and/or a single pair-set controller (with both pairsets controlled by it).

SuggestedRemedy

Insert the attached state diagrams with appropriate color changes and removal of comments as shown in T3T4PSEStateDiagramV1.3a.pptx.

Proposed Response Response Status W

Wait for presentaiton

Cl 33 SC 33.2.5 P 232 L 2 # 263
 Dove, Daniel Dove Networking Solut

Comment Type TR Comment Status X Pres: SD

4PID has been deprecated (in my proposal) by PD_Check.

SuggestedRemedy

Replace "4PID" with "PD_Check" in all instances of text using search/replace, remove the TBD, delete "the detection state" and replace with "measurements on" and delete "mutual identification". Replace PD_4pair_candidate" with "PD_Alt".

Proposed Response Response Status W

Wait for presentation.

Cl 33 SC 33.2.6 P 232 L 12 # 116
 Yseboodt, Lennart Philips

Comment Type T Comment Status X PSE classification

Section 3.2.6 describes classification. Classification has become significantly more complicated compared to Type 2 classification:

- single & dual signature
- Autoclass
- power demotion
- long finger vs short finger

The text alone + the state machine are sufficient to (eventually) figure out how it works, but providing a simple overview would help the reader.

SuggestedRemedy

See yseboodt_classification_overview_0915.pdf

Proposed Response Response Status W

Waiting for document

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Cl 33 SC 33.2.6 P 234 L 35 # 192
 Johnson, Peter Sifos Technologies

Comment Type T Comment Status D PSE Classification

Footnote 1 to Table 33-8 says "A Type 3 PSE that will provide class 3 or lower power levels may opt to use 1-event Physical Layer classification". Is this really an option? Para. 33.2.6.2 mandates that a Type-3 or Type-4 PSE powering a Class 0 to 3 PD provides one-event classification with no mark events. Para. 33.3.2.4.4 (under Table 33-3) says Type-3 and Type-4 PSEs shall issue no more class events than the class they are capable of supporting..."

SuggestedRemedy

Replace "may opt to" with "is required to". (Any 'shall' here seems redundant with other paragraphs referenced above.)

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change to:

"A Type 3 PSE that will provide class 3 or lower power levels uses 1-event Physical Layer classification".

Cl 33 SC 33.2.6 P 234 L 35 # 131
 Yseboodt, Lennart Philips

Comment Type TR Comment Status X Pres: Types

Topic: Type 4 classrange
 "A Type 3 PSE that will provide class 3 or lower power levels may opt to use 1-event Physical Layer classification."

SuggestedRemedy

"A Type 3 or Type 4 PSE that will provide class 3 or lower power levels may opt to use 1-event Physical Layer classification."

Proposed Response Response Status W

See comment 192.

Cl 33 SC 33.2.6.2 P 236 L 27 # 194
 Johnson, Peter Sifos Technologies

Comment Type T Comment Status D PSE Classification

"PSEs that implement CLASS_EV1_LCF, when connected to single-signature PD's, shall transition directly from CLASS_EV1_LCF to MARK_EV_LAST if they implement only one class event."

First, why not say "Type 3 and Type 4 PSE's" ?

Second, the Figure 33-9g does not include this transition possibility. Figure 33-9g will need this transition if we want Type 3 and Type 4 PD's to "remember" that the PSE is Type 3 or Type 4.

Third, why is this limited to single signature PD's?

SuggestedRemedy

Figure 33-9g, the Classification State Diagram, probably needs a transition from CLASS_EV1_LCF to MARK_EV_LAST in place of transitioning to node "C".

(This could be an editor note now...)

Replace "PSEs that implement CLASS_EV1_LCF" with "Type 3 and Type 4 PSEs".

May need an editor note to review this phrase once all the details for Dual Signature classification are worked out.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change text to "Type 3 and type 4 PSEs connected to single-signature PDs shall transition directly from..."

Update to Figure 33-9g to be presented.

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CI 33 SC 33.2.6.2 P 236 L 52 # 133
 Yseboodt, Lennart Philips

Comment Type TR Comment Status D PSE Classification

"If the result of the first class event is any of Classes 0, 1, 2, or 3, a Type 3 or Type 4 PSE treats a single-signature PD as a Type 1 PD and shall omit the subsequent mark and class events and classify the PD according to the result of the first class event."

The PSE should visit MARK_EV_LAST in this case.

SuggestedRemedy

"If the result of the first class event is any of Classes 0, 1, 2, or 3, a Type 3 or Type 4 PSE treats a single-signature PD as a Type 1 PD and shall skip all subsequent class events, transition directly to MARK_EV_LAST, and classify the PD according to the result of the first class event."

Add editors note on page 226 below Figure 33-9g "TODO: add arrow from CLASS_EV1_LCF to MARK_EV_LAST".

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Change text as shown in suggested remedy.

Update to Figure 33-9g to be presented.

CI 33 SC 33.2.6.3 P 239 L 1 # 134
 Yseboodt, Lennart Philips

Comment Type TR Comment Status D PSE Classification

Autoclass Table 33-10a is missing values for T_auto_pse1(max) and T_auto_pse2(min).

SuggestedRemedy

Add to Table 33-10a:
 T_auto_pse1 max = 1.55
 T_auto_pse2 min = 3.1

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

These numbers are WAY TOO tight. The accuracy required to get an timer to stop between 3.1 and 3.2 seconds is +/- 1.59 %

Use:

T_auto_pse1 max = 1.65
 T_auto_pse2 min = 2.8

They both equate to 6.X% accuracies.

CI 33 SC 33.2.7 P 240 L 38 # 108
 Yseboodt, Lennart Philips

Comment Type ER Comment Status D Editorial

Item 4a Parameter is "Pairset current due to E2ERunb within E2ERunb range for class x". Not intuitive.

SuggestedRemedy

Change Parameter for Item 4a to:
 "Pairset current capability in POWER_ON state, Class x"

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by comment 210

NonEasy

CI 33 SC 33.2.7 P 240 L 38 # 210
 Dwelley, David Linear Technology

Comment Type T Comment Status D Editorial

Table 33-11, item 4a

Parameter label is unwieldy:
 "Pairset current due to E2ERunb within E2ERunb range for class X"

33.2.7.4a (now 33.2.7.4.1 - this should also be fixed) contains enough information about unbalance to make this clear.

SuggestedRemedy

Replace with "Pairset current including unbalance for class X" (four places).

Correct Additional Information column to point to 33.2.7.4.1.

Proposed Response Response Status W

PROPOSED ACCEPT.

NonEasy

IEEE P802.3bt D1.2 4P PoE 5th Task Force review comments

Cl 33 SC 33.2.7.4.1 P 246 L 6 # 199
 Dwelley, David Linear Technology

Comment Type E Comment Status D Icon

The PSE_P2PRunb and E2EP2PRunb acronyms are unnecessarily complicated. The descriptions and analysis in 33.2.7.4.1 make the nature of the unbalance clear - the acronym doesn't need to carry all the details.

SuggestedRemedy

Replace with PSEunb and E2Eunb throughout this section and in section 33A.6.

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 33 SC 33.2.7.4.1 P 246 L 10 # 209
 Dwelley, David Linear Technology

Comment Type T Comment Status D Icon

Leftover Icon-2p reference and some awkward language:
 "The PSE_P2PRunb determined by RPair_max and RPair_min ensures that along with any other parts of the system - i.e. channel (cables and connectors) and the PD, the maximum pair current due to E2EP2PRunb, is not exceeding Icon-2P-unb as defined in Table 33-11 during normal operating conditions. Icon-2P-unb maximum is the average pair current due to E2EP2PRunb that is higher than Icon-2P specified in Table 33-11."

SuggestedRemedy

Fix first sentence:
 "The PSE_P2PRunb parameter is chosen to ensure that unbalance in other parts of the system (cables, connectors and PD) will not cause the maximum pair current to exceed Icon-2P-unb (as defined in Table 33-11) during normal operating conditions."

Strike the second sentence.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Suggested remedy for first sentence is good.

Still need definition of Icon-2p-unb (or whatever we choose to call it now).

Cl 33 SC 33.2.7.4.1 P 246 L 11 # 156
 Yseboodt, Lennart Philips

Comment Type TR Comment Status D Icon

"I con-2P-unb maximum is the average pair current due to E2EP2PRunb that is higher than I con-2P specified in Table 33-11."

There is no I con-2P-unb maximum. Icon-2P no longer exists.

SuggestedRemedy

"I con-2P-unb is the pairset current in case of maximum unbalance and will be higher than half of Icon."

Proposed Response Response Status W

PROPOSED ACCEPT.

Could be OBE by 209. otherwise reject 209 and accept this.

Cl 33 SC 33.2.7.4.1 P 246 L 11 # 112
 Yseboodt, Lennart Philips

Comment Type ER Comment Status D Icon

"... the maximum pair current due to E2EP2PRunb, is not exceeding I con-2P-unb as defined in Table 33-11 during normal operating conditions."

SuggestedRemedy

"... the maximum pair current due to E2EP2PRunb, does not exceed I con-2P-unb as defined in Table 33-11 during normal operating conditions."

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

OBE by 209.

IEEE P802.3bt D1.2 4P PoE 5th Task Force review comments

CI 33 SC 33.2.7.11a P 251 L 3 # 230
 Schindler, Fred Seen Simply

Comment Type TR Comment Status X Pres: Types

The added section and choices made related to Type power may confuse the market place. Previously we had Types that indicated abilities, one of which was maximum expected power. Type 3 and 4 introduce devices that no longer guaranty a specific power level. These choices require new terms to be used and explained.

Before we had a Type-X system that indicated cabling, connectors, power source, and power acceptance ability.

Now we have Type-X PSE that cannot provide full power to a Type-X PD and the system cabling infrastructure needs to meet the Type-X PSE needs. If I change the Type-X PSE to a PSE that supports the maximum class possible for Type-X the cabling infrastructure needs to be changed.

Using the suggested solution removes many corner-cases and footnotes, which makes the specification easier to understand.

SuggestedRemedy

The Task Force should discuss these implications and the need for so many variants of the same Type to determine how to proceed.

The preferred solution is to require a PSE of Type-X to provide Ptype(min) for that type.

Proposed Response Response Status W

Task Force to discuss.

CI 33 SC 33.2.8 P 251 L 36 # 128
 Yseboodt, Lennart Philips

Comment Type T Comment Status X 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." (As in 802.3at)

"A PSE shall 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." (As in 802.3af)

In .at the shall was changed to 'does not', which is no longer normative, but also not correct.

SuggestedRemedy

"A PSE shall not initiate power provision to a link if, based on the number of classification events produced by the PSE, the PD is unable to ascertain the available amount of power based on the PDs advertised class."

Proposed Response Response Status W

I don't understand the suggested remedy. How can the PSE know what the PD is able to ascertain or not?

This is handled in .3at by a Type 1 PSE classifying a class 4 PD as class 0 (or 3). We could handle it in a similar way or we can change this sentence to reflect power demotion.

CI 33 SC 33.3.5.1 P 265 L 7 # 104
 Yseboodt, Lennart Philips

Comment Type ER Comment Status D Pres: Types

"Since 1-Event classification is a subset of Multiple-Event classification, Type 2, and Type 3 PDs operating with a maximum power draw corresponding to class 4 or higher, as well as Type 4 PDs respond to 1-Event classification with a Class 4 signature."

Why list Type 4 separately ? Can be shorter.

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

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE P802.3bt D1.2 4P PoE 5th Task Force review comments

Cl 33 **SC 33.3.5.3** **P 267** **L 40** # **123**
 Yseboodt, Lennart Philips

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

"The PD shall not draw more power than the power consumed during the time from T AUTO_PD1 to T AUTO_PD2 (as defined in Table 33-17a) at any point until V Port_PD falls below V Reset_th."

This precludes re-negotiating through DLL.

SuggestedRemedy

"The PD shall not draw more power than the power consumed during the time from T AUTO_PD1 to T AUTO_PD2 (as defined in Table 33-17a) at any point until V Port_PD falls below V Reset_th, unless the PD successfully negotiates a higher power level through Data Link Layer classification as defined in section 33.6."

Proposed Response **Response Status W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by 148 (the exact same comment.)

Cl 33 **SC 33.3.5.3** **P 267** **L 40** # **148**
 Yseboodt, Lennart Philips

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

"The PD shall not draw more power than the power consumed during the time from T AUTO_PD1 to T AUTO_PD2 (as defined in Table 33-17a) at any point until V Port_PD falls below V Reset_th."

This precludes re-negotiating through DLL.

SuggestedRemedy

"The PD shall not draw more power than the power consumed during the time from T AUTO_PD1 to T AUTO_PD2 (as defined in Table 33-17a) at any point until V Port_PD falls below V Reset_th, unless the PD successfully negotiates a higher power level through Data Link Layer classification as defined in section 33.6."

Proposed Response **Response Status W**

PROPOSED ACCEPT.

Cl 33 **SC 33.3.7** **P 269** **L 35** # **51**
 Bennett, Ken Sifos Technologies, In

Comment Type TR **Comment Status X** **PD Power**

In item 4 of table 33-18 the PClass_PD parameter description has changed from "input average power" to "input available average power". The values for it are in the MAX column. It seems like the values for it should be in the MIN column, because it is a minimum "available" power under worst case conditions.

The pre-existing text in the item 4 info reference, 33.3.7.2, defines PClass_PD as the "maximum input power", which does not match either the pre-existing nor the modified PClass_PD parameter description in table 33-18.

There is an underlying problem, which is that PClass_PD, which is a power classification level, is shown as a Parameter in table 33-18, with a range within each class.

It would be much clearer to present this using the same method that's used in the PSE section for PClass, which specifies values for each class in a separate table (33-7), and uses "PClass" in the MIN/MAX columns of table 33-11.

The suggested remedy would not change the content or intent of the pre-existing information text in 33.3.7.2.

SuggestedRemedy

- 1) Incorporate PClass_PD levels into table 33-16a.
- 2) Change item 4 to a single row with the following items: Parameter="Input Average Power"; Symbol="Pport_PD"; and MAX="PClass_PD".
- 3) Adjust references as necessary

(See bennett_PClass_PD.pdf)

Proposed Response **Response Status W**

Task Force to discuss

IEEE P802.3bt D1.2 4P PoE 5th Task Force review comments

Cl 33 SC 33.3.7.3 P 90 L 43 # 41
 Darshan, Yair Microsemi

Comment Type TR Comment Status X Pres: Yair3

The following comment addresses linrush in Table 33-11 item 5a and PD Cport max to be supported by PSE linrush. Since both parameters are tied together, they are addressed at the same comment.

See details in darshan_03_0915.pdf titled: Type 3 and 4 linrush for proposed solution that is a compromise for moving the standard forward.

SuggestedRemedy

See details in darshan_03_0915.pdf.

Proposed Response Response Status W

Wait for presentation.

Cl 33 SC 33.3.7.5 P 273 L 33 # 183
 Zimmerman, George CME Consulting

Comment Type TR Comment Status X PD Power

"When the input voltage at the PI is static and in the range of VPort_PD defined by Table 33-18, the transient current drawn by the PD shall not exceed 4.70 mA/μs in either polarity. A dual-signature PD shall not exceed 4.70 mA/μs in either polarity per pairset in the same conditions."

First, now that we have 4 pairs, this leaves the reader to have to assume whether for single signature PDs the 4.70 mA/μs applies to the sum of the 2 pairsets or per pairset. In the below, I assume it is to the sum of the 2 pairsets.
 Second, it is worded awkwardly.

SuggestedRemedy

Change "When the input voltage at the PI is static and in the range of VPort_PD defined by Table 33-18, the transient current drawn by the PD shall not exceed 4.70 mA/μs in either polarity. A dual-signature PD shall not exceed 4.70 mA/μs in either polarity per pairset in the same conditions."

to "When the input voltage at the PI is static and in the range of VPort_PD defined by Table 33-18, the transient current drawn by the PD shall not exceed 4.70 mA/μs in either polarity. For a single-signature PD, this requirement applies to the sum of the current on both pairsets, for a dual-signature PD this requirement applies to the current on a per-pairset basis."

Proposed Response Response Status W

Change to:

"When the input voltage at the PI is static and in the range of VPort_PD defined by Table 33-18, the transient current drawn by the PD shall not exceed 4.70 mA/μs in either polarity per pairset."

Remove sentence "A dual-signature..."

IEEE P802.3bt D1.2 4P PoE 5th Task Force review comments

Cl 33 SC 33.5.1.1 P 292 L 52 # 265

Dove, Daniel Dove Networking Solut

Comment Type TR Comment Status X Pres: PSE SD

We need bits in the PSE Control Register that control the state of each pairset independently from the overall PSE configuration. For instance, one pairset could be disabled while the other enabled or in forced-power mode.

Suggested Remedy

Insert row for bit 11.9 PS Disable A
Insert row for bit 11.8 PS Disable B

These bits identify whether the PSE Enable bits apply to the pairset A or B. If 0, the PSE Enable bits apply and default behavior is to follow the order of bits 1:0. If 1, the PSE Enable bits do not apply and the pairset is disabled. Note: I chose this polarity to keep consistent with existing implementations where those bits would naturally be zero yet pairset operation functions based upon the bits in values 1:0. Additional note: For Type 3 and Type 4 PSEs, one would expect the bits 1:0 to control both pairsets the same way when attached to a Type 3/4 SS PD This can be done by setting bits3:2 to '11' An alternative approach to this would be to define separate registers for PS_AltA and PS_AltB or identify them as local registers per pairset.

Proposed Response Response Status W

Task Force to discuss