

IEEE P802.3bt D2.1 4P-PoE 2nd Task Force review comments

Cl 33 SC 33.3.3.10 P 141 L 46 # 25
 Beia, Christian STMicroelectronics

Comment Type E Comment Status A Pres: Stewart1

Figure 33-32
 The exit conditions from DLL_ENABLE state differ from the original Visio file

SuggestedRemedy

Replace exit condition to P1 with pse_dll_power_type=1 (it is pse_power_type=3 in D2.1),
 and exit condition to P2 with pse_dll_power_type>1 (it is pse_power_type>3 in D2.1)

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE by 140

###

Comment 140 has the following response:
 ACCEPT IN PRINCIPLE.

Add TDL (Lennart, Fred): Fix DLL (connection of T3/4 SD to DLL SD).

Cl 33 SC 33.3.6.1 P 149 L 43 # 26
 Beia, Christian STMicroelectronics

Comment Type T Comment Status A Editorial

Despite of the title, 33.3.6.1 deals with both single and multiple-event class signature.

SuggestedRemedy

Merge 33.3.6.1 and 33.3.6.2 in one subclause.
 Change the title to PD class signature

Response Response Status C

ACCEPT IN PRINCIPLE.

Heath to include in his TDL for classification.

Cl 33 SC 79.3.2.6d P 224 L 12 # 41
 Darshan, Yair Microsemi

Comment Type TR Comment Status A LLDP

(TDL #232 Lennart Y.)
 The text says:
 "Using the Autoclass field to trigger a new Autoclass measurement allows a PD to change
 maximum power consumption."
 In addition Table 79-5d tries to specify some "handshake" parameters.

I believe the definitions are incomplete and may cause issues.
 A)It is not clear who is initiating the request for new Autoclass measurement?
 B)What is the timing sequence?
 C)When to raise power?
 D)When to measure?
 E)Where is the final Acknowledge?
 F)The flow is missing.

SuggestedRemedy

This is part of the TDL for comment #232 D2.0 for Lennart..)

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE by 129

###

Comment 129 has the following response:
 ACCEPT IN PRINCIPLE.

Add a TDL (Lennart, Fred): Complete 79.3.2.6d registers.

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Cl 33 SC 33A.5 P 234 L 17 # 44
 Darshan, Yair Microsemi

Comment Type TR Comment Status A Pres: Darshan4

"For PD power above the values shown in Table 33.28 and up to PClass, stringent requirement will be needed to not exceed ICon-2P_unb by means of smaller constants ALFA and BETA in the equation RPair_PD_max = ALFA*RPair_PD_min+BETA."

It will help to the designer to have the equations and constants for class 6 and 8 for extended power as well.

To add to the spec the equations for extended power for class 6 and 8 and modify the above text accordingly.

SuggestedRemedy

Adopt darshan_04_1116.pdf if ready for the meeting. If not ready add to TDL.

Response Response Status C

ACCEPT IN PRINCIPLE.

add TDL (Yair): To add to the spec the equations for extended power for class 6 and 8 and modify the above text accordingly.

Cl 30 SC 30.12.2.1.14 P 34 L 50 # 52
 Darshan, Yair Microsemi

Comment Type TR Comment Status A Pres: Schindler1

"aLldpXdot3LocPowerType" There is no value for Type 3 or Type 4.
 (See comment #490 in D2.0)

SuggestedRemedy

If not resolved yet for D2.1, add it to the TDL for the next draft.

Response Response Status C

ACCEPT IN PRINCIPLE.

Add TDL (David Law): Update "aLldpXdot3LocPowerType" Field in Clause 30 to include Type 3 and 4.

Cl 33 SC 33.2.5.11 P 75 L 11 # 54
 Darshan, Yair Microsemi

Comment Type TR Comment Status A Pres: Yseboodt4

The pd_autoclass term is never read by the state diagram.
 (See comment #503 in D2.0)

SuggestedRemedy

If not resolved yet for D2.1, add it to the TDL for the next draft.

Response Response Status W

ACCEPT IN PRINCIPLE.

Add TDL (Stover): Add Autoclass power measurement to SDs.

This comment resolves comment: 115

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CI 33 SC 33.2.5.12 P 97 L 22 # 55
 Darshan, Yair Microsemi

Comment Type TR Comment Status A Pres: Darshan8

(TDL for comment #254 , D2.0)
 The PSE state machine part for single signature (Figure 33-18) when it needs to know class code by issuing 3 finger and then doing class reset due to lake of sufficient power in which it need to generate only one finger etc. is missing.
 This is covered by the text but not in the state machine.

SuggestedRemedy

Add to figure 33-18 the missing state machine part in darshan_08_1116.pdf if available for this meeting.
 If not available, keep this in the TDL.

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE by 178

###

Comment 178 has the following response:
 ACCEPT IN PRINCIPLE.

Add TDL (Lennart): Update PSE Class SDs.

Strawpoll #1
 Class SD is controlled by pse_avail_power, class_num_events is removed.
 For: 17
 Against: 0

Strawpoll #2
 Optional method is supported to probe the requested class by producing 3 class events and reset.
 For: 9
 Against: 4

Strawpoll #3
 Optional method is supported to probe the requested class by producing 3 class events and reset using only one extra state in the SD. Minimal changes to the mainline class SD will be included.
 For: 8
 Against: 0

CI 33 SC 33.3.1 P 43 L # 63
 Darshan, Yair Microsemi

Comment Type T Comment Status A Pres: Jones1

(TDL #171)
 This comment is about addressing the significant digits for the numbers/equations/constant in the standard and try to be satisfied with 3 significant digits unless it violates the accuracy required for equations result and not cause system over design.

SuggestedRemedy

Adopt darshan_15_1116.pdf if available. If not available keep this in the TDL.

Response Response Status C

ACCEPT IN PRINCIPLE.

Keep on TDL.

CI 33 SC 33.3.6 P 149 L 35 # 93
 Jones, Chad Cisco

Comment Type ER Comment Status A PD Class

The PD class section is weak on the statement that a PD may not request more power via LLDP than was requested on the physical layer. Yes it is stated on line page 149 line 5 and line 32, but it is vague.

SuggestedRemedy

after this sentence on line 35: "After a successful DLL classification, the assigned Class changes depending on the value of PDMaxPowerValue variable, as defined in Table 33-25."
 add: "DLL classification cannot be used to negotiate to a higher class than the one requested by physical layer classification."

Response Response Status C

ACCEPT IN PRINCIPLE.

Add TDL (Chad, Lennart): Figure out legacy requirements for physical layer and DLL class and find text to prevent DLLing above requested class.

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Cl 79 **SC 79.3.8.2** **P 228** **L 42** # **101**
 Jones, Chad Cisco
Comment Type **TR** **Comment Status** **A** **LLDP**
 valid values for the PSE voltage measurement is 1 through 65000? This implies 65V at the PSE PI
SuggestedRemedy
 change 65000 to 57000
Response **Response Status** **C**
 ACCEPT IN PRINCIPLE.

 Add TDL (Chad): Add text alerting reader that the measurement range is larger than the allowed operating voltage to LLDP measurement section for PSE voltage.

Cl 33 **SC 33.2.5.7** **P 72** **L 24** # **112**
 Schindler, Fred Seen Simply, Cisco, T
Comment Type **TR** **Comment Status** **A** **PSE SD**
 The legacy state diagram (page 72) and the Type 3 and 4 state diagram (page 91) and text do not match for the behavior for the processing time of the tdbo_timer cover in text on page 105 line 21. Legacy text indicates, "If a PSE that is performing detection using Alternative B (see 33.2.4) determines that the impedance at the PI is greater than Ropen as defined in Table 33-12, it may optionally consider the link to be open circuit and omit the tdbo_timer interval." The state diagrams require that all PSE types skip the BACKOFF state when the signature is open_circuit while the text makes this behavior optional.
SuggestedRemedy
 State diagrams overrides text. Change the text to match the state diagram behavior by replacing the called-out text with, "When a PSE that is performing detection using Alternative B (see 33.2.4) determines that the impedance at the PI is greater than Ropen as defined in Table 33-12, it is recommend that Type 1 or Type 2 PSEs omitted the the tdbo_timer interval, while Type 3 and Type 4 PSEs shall omit the tdbo_timer interval."
Response **Response Status** **C**
 ACCEPT IN PRINCIPLE.

 This needs to be filed as a maintenance request for Type 1 and Type 2. However, I would recommend updating the state diagram to make it optional since that was the intent and you won't make any PSEs noncompliant by doing that.

 Add maintenance request to TDL for Chad Jones.

 For Type 3 and 4, implement:

 add new variable:
 option_tdbo_omit: A variable indicating if the PSE omits the Tdbo back off timer if it detects an open circuit on when performing detection only on alternative B.
 True: The PSE omits the Tdbo back off timer.
 False: The PSE does not omit the the Tdbo back off timer.

 Update state diagram to use new variable by change transition from DETECT_EVAL to BACKOFF to:
 (pse_alternative=b) * ((sig_pri=invalid) + (sig_pri=open_circuit)!option_tdbo_omit)

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Cl 33 SC 33.2.7 P 107 L 1 # 115
 Schindler, Fred Seen Simply, Cisco, T

Comment Type TR Comment Status A Pres: Yseboodt4

Existing text, "If the PD connected to the PSE performs Autoclass (see 33.2.7.3 and 33.3.6.3), the PSE may set its minimum supported output power based on PAutoclass, ." and the Type 3 and 4 PSE state diagram do not provide the behavior that determines pse_available_pwr, which is used to determine the power provided to the PD. Similarly I do not see where autclassification takes place and how the system adjusts the PSEAllocatedPowerValue.

SuggestedRemedy

The subject matter expert (Lennart) tackling D2.0 comments 232, and 476, could solve determining pse_available_pwr, by modifying function do_autoclassification to set this value." The other missing behavior will likely be completed to close the D2.0 TDL comments. This comment should not be considered satisfied until the deficient behavior is provided.

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE by 54.

###

Comment 54 has the following response:
 ACCEPT IN PRINCIPLE.

Add TDL (Stover): Add Autoclass power measurement to SDs.

Cl 33 SC 33.2.7.2 P 110 L 13 # 117
 Schindler, Fred Seen Simply, Cisco, T

Comment Type TR Comment Status A Pres: Yseboodt1

Existing text, "Type 3 and Type 4 PSEs may issue a class reset event to perform mutual identification." does not provide details on what a class reset is or does. The Type 3 and 4 PSE state diagram does not provide this behavior. Timing details related to Tpon may be missing

SuggestedRemedy

This solution assumes PSE classification of a single signature PD.

Modify the reference by appending, the sentence, "A class reset event causes classification to enter CLASS_EV1_LCE." Add an entry into CLASS_EV1_LCE with the condition "pse_class_reset". On page 81 add the new definition, "pse_class_reset
 An implementation-specific means of repeating classification, see 33.3.7.2.

FALSE: Do not permit entry into PD classification (default).
 TRUE: Permit entry into PD classification."

Add operation "pse_class_reset <= FALSE" within state CLASS_EV1_LCE.

Participants that need this ability should discuss the need to amend text related to meeting Tpon requirements if the existing timing cannot be met (i.e. class done twice and power needs to be on within Tpon).

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE by 178

###

Comment 178 has the following response:
 ACCEPT IN PRINCIPLE.

Add TDL (Lennart): Update PSE Class SDs.

Strawpoll #1
 Class SD is controlled by pse_avail_power, class_num_events is removed.
 For: 17
 Against: 0

Strawpoll #2
 Optional method is supported to probe the requested class by producing 3 class events and reset.
 For: 9
 Against: 4

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Strawpoll #3

Optional method is supported to probe the requested class by producing 3 class events and reset using only one extra state in the SD. Minimal changes to the mainline class SD will be included.

For: 8
Against: 0

Cl 33 SC 33.3.3.10 P 141 L 28 # 118
Schindler, Fred Seen Simply, Cisco, T

Comment Type TR Comment Status A PSE SD

The Type 3 and 4 Single Signature PD state diagram prevents DLL from increasing power demand when the PSE power budget has increased. This occurs because the variable pse_power_level and pd_req_class is not changed when the PDMaxPowerValue is increased.

SuggestedRemedy

On page 150 modify the second column of Table 33-25 from "Assigned Class" to "Assigned Class
pse_power_level
pd_req_class"

Response Response Status C

ACCEPT IN PRINCIPLE.

Add to TDL (Fred, Lennart): Need to fix PD SDs so that pd_maxpower can get updated (DLL up).

Cl 33 SC 33.3.6.2 P 152 L 9 # 122
Schindler, Fred Seen Simply, Cisco, T

Comment Type TR Comment Status A PD Class

The explanation of how DLL may alter PD variables to affect classification is spread over widely-separated points, which may lead to confusion. See points on page 149 line 35, Table 33-25 on page 150, and page 152 line 5.

SuggestedRemedy

Add a cross reference to the end of text on page 152 line 9.
". the variable pd_max_power. DLL affects pd_max_power indirectly by changing PDMaxPowerValue shown in Table 33-25."

Response Response Status C

ACCEPT IN PRINCIPLE.

Append to 33.3.8.2: "PDs that have successfully completed DLL classification, shall not exceed power consumption of PDMaxPowerValue as defined in 33.5.3.3.

Add to TDL (Fred, Lennart): Add DLL ability to change PD max power to SD.

Cl 30 SC 30 P 24 L 1 # 124
Schindler, Fred Seen Simply, Cisco, T

Comment Type ER Comment Status A LLDP

Table 79-9 'IEEE 802.3 Organizationally Specific TLV/LLDP Local System Group managed object class cross references' lists a number of new attributes in the 'LLDP Local System Group managed object class attribute' column for the 'Power via MDI' TLV that have not been defined in Clause 30, Table 30-4 "DTE Power MDI capabilities" in oPSE managed objects class (30.9.1).

SuggestedRemedy

Locate a subject matter expert (not the commentor) to evaluate this and provide the appropriate comments to complete the called out section.

Add row with column values, aPSEPowerPairsx, ATTRIBUTE, GET-SET, X in column "PSE Basic Package (mandatory)".

Response Response Status C

ACCEPT IN PRINCIPLE.

Add to TDL (David Law): Update Clause 30 based on Table 79-9.

Cl 79 SC 79.3.2.6d P 224 L 9 # 129
Schindler, Fred Seen Simply, Cisco, T

Comment Type TR Comment Status A LLDP

A subject matter expert (Lennart?) needs to complete this register so that readers know how to process each field. For example what does the PSE or PD place in them?

SuggestedRemedy

Create a TDL to correct this concern.

Response Response Status C

ACCEPT IN PRINCIPLE.

Add a TDL (Lennart, Fred): Complete 79.3.2.6d registers.

This comment resolves comment: 41

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Cl 79 SC 79.3.8.2 P 227 L 9 # 130
 Schindler, Fred Seen Simply, Cisco, T

Comment Type TR Comment Status A LLDP

A subject matter expert (Lennart?) needs to complete this register so that readers know how to process each field. For example what does the PSE or PD place in them? Is this a R/W or W?

SuggestedRemedy

Create a TDL to correct this concern.

Response Response Status C

ACCEPT IN PRINCIPLE.

Add a TDL (Lennart, Fred): Complete measurement TLV descriptions.

Cl 33 SC 33.3.3.7 P 138 L 24 # 140
 Stewart, Heath Linear Technology

Comment Type E Comment Status A Pres: Stewart1

pse_dll_power_type
 A control variable output by the PD power control state diagram, defined in Figure 33-49, that indicates the PSE Type as 1 or 2, see 79.3.2.4.1.

Values:

- 1: The PSE is a Type 1 PSE, for a Type 1 PSE
- 2: The PSE is a Type 2 PSE, for Type 2, Type 3, or Type 4 PSEs

As clear as this already is, perhaps it could be even more clear.

Generally the Type 3/4 single-signature definition of pse_dll_power_type and associated text in 33.3.7 PSE Type id has become imprecise in labeling Type 2, 3 and 4 PSEs as Type 2's.

Changing the variable enumerations to "is a Type 1" TRUE and FALSE seems like the easiest way forward.

SuggestedRemedy

See stewart_01_1116

Response Response Status C

ACCEPT IN PRINCIPLE.

Add TDL (Lennart, Fred): Fix DLL (connection of T3/4 SD to DLL SD).

This comment resolves comment: 25

Cl 33 SC 33.3.3.8 P 138 L 43 # 141
 Stewart, Heath Linear Technology

Comment Type T Comment Status A PD SD

In the INRUSH state the PSE controls inrush, when tinrush expires the PD transitions to MDI_POWER1, then either begins to control inrush or transitions directly to its Pclass_PD state.

Note or is change to and to reflect the Miniumum(PDinrush, PDclass) function.

Also verb forms do not match (controls vs observe)

SuggestedRemedy

Change tinrushpd_timer
 A timer used to determine when the PD controls the input current, or observe PClass_PD power limits; see TInrush_PD in Table 33-31.

to tinrushpd_timer
 A timer used to determine when the PD exits the INRUSH state and begins to either control the input current, and observe PClass_PD power limits; see TInrush_PD in Table 33-31.

Response Response Status C

ACCEPT IN PRINCIPLE.

Change to: tinrushpd_timer
 A timer used to determine when the PD exits INRUSH and meets the requirements of MDI_POWER1; see TInrush_PD in Table 33-31.

Add to TDL (Lennart): Bring Inrush section (PD) inline with transtion into MDI_POWER1.

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Cl 33 SC 33.3.6 P 149 L 30 # 148
 Stewart, Heath Linear Technology

Comment Type E Comment Status A Editorial

Description of the requested class is inconsistent with a prior definition on line 10 same page. Add the word maximum.

SuggestedRemedy

Change
 The requested Class of the PD is the amount of power the PD requests from the PSE

To
 The requested Class of the PD is the maximum amount of power the PD requests from the PSE

Response Response Status C

ACCEPT IN PRINCIPLE.

Add to TDL (Heath): fix PD classification text to make sure it is consistent.

Cl 00 SC 0 P L # 162
 Stover, David Linear Technology

Comment Type TR Comment Status A Pres: Paul1

TDL D2.0 #513 - System Unbalance Requirements

SuggestedRemedy

See paul_01_1116.pdf

Response Response Status W

ACCEPT IN PRINCIPLE.

Add TDL (Yair, Michael, Ken, Lennart): Move normative requirements from Annex 33B into main body of standard. Make Annex 33B informative.

Cl 33 SC 33.1.4.1 P 54 L 10 # 173
 Yseboodt, Lennart Philips

Comment Type TR Comment Status A Cabling

We list a number of key parameters and their description in this section. Rch is missing.

SuggestedRemedy

Add the following before the Rchan description:
 "Rch is the highest DC pairset loop resistance.
 The supported value of Rch depends on the PSE Type and is defined in Table 33-1."

Response Response Status C

ACCEPT IN PRINCIPLE.

"Rch is the maximum DC pairset loop resistance. The supported value of Rch depends on the PSE Type and is defined in Table 33-1."

Add TDL (Christian): Review use of word channel in clause 33.

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CI 33 SC 33.2.5.9 P 82 L 30 # 178
 Yseboodt, Lennart Philips

Comment Type **TR** Comment Status **A** Pres: Yseboodt1

The changes adopted last cycle that introduced Table 33-8 have issues.
 For instance, according to Table 33-7 and 33-8, a Type 4 PSE cannot deliver anything but Class 7 or 8.

SuggestedRemedy

The proposed remedy is to simplify the classification state diagram, to only use pse_avail_power and no longer use class_num_events.
 Adopt yseboodt_01_1116_simpleclass.pdf

Response Response Status **C**

ACCEPT IN PRINCIPLE.

Add TDL (Lennart): Update PSE Class SDs.

Strawpoll #1

Class SD is controlled by pse_avail_power, class_num_events is removed.

For: 17
 Against: 0

Strawpoll #2

Optional method is supported to probe the requested class by producing 3 class events and reset.

For: 9
 Against: 4

Strawpoll #3

Optional method is supported to probe the requested class by producing 3 class events and reset using only one extra state in the SD. Minimal changes to the mainline class SD will be included.

For: 8
 Against: 0

This comment resolves comments: 55, 117

CI 33 SC 33.2.8.4 P 118 L 43 # 217
 Wendt, Matthias Philips

Comment Type **TR** Comment Status **A** PSE Unbalance

"I Peak-2P-unb is the minimum current due to unbalance effects that a PSE must support on a pairset as defined by Equation (33-11)."

Only applies when 4-pair powering a single-signature PD.
 Also 'must support' is not appropriate.

SuggestedRemedy

"I Peak-2P-unb is the minimum current due to unbalance effects that a PSE supports on a pairset, as defined by Equation (33-11), when powering a single-signature PD over 4-pair."

Response Response Status **W**

ACCEPT IN PRINCIPLE.

ALSO, Add to TDL (Dave A.): Rewrite Ipeak section (and maybe all of 33.2.8.4) to reorder properly.

This section needs some work. This sentence says that the minimum current on a pairset is I Peak-2P-unb, but equation 33-14 says that it is actually the minimum of that value and I Peak - I Port-2p-other.

Why is Equation 33-14 introduced before equation 33-10?

Shouldn't this section introduce equation 33-14 first (make it equation 33-10) and then everything that follows is an explanation of those values?

I may try to rewrite this section before the meeting. Please talk to me (Dave A.) before working on it.

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Cl 33A SC 33A.1 P 240 L 24 # 275
 Yseboodt, Lennart Philips

Comment Type ER Comment Status A Annex

"See Figure 33A-2 for the test setup and Figure 33A-3 for the test requirements."

Where do I begin ?

These figures have a number of issues.
 The biggest one is that they are not used, nor described.
 There is no text at all that tells what to do with it.

33A-3, describes "test requirements". But is just a figure.
 With an X axis in KHz... but no values anywhere.

SuggestedRemedy

- Remove quoted text and Figures 33A-2 and 33A-3.

Response Response Status C

ACCEPT IN PRINCIPLE.

Add TDL (Yair): Update text and Figures 33A-2 and 33A-3 to make them clear.

This comment resolves comment: 276

Cl 33A SC 33A.1 P 241 L 1 # 276
 Yseboodt, Lennart Philips

Comment Type ER Comment Status A Annex

Figure 33A-3 uses no less than 3 different font sizes, and fonts in one Figure.
 It is also unclear if the Z_ser @ frequency=0 belongs to that bottom line, or belongs to the range at the bottom.

SuggestedRemedy

I will venture a guess here and predict this is a Yair Figure from the .af days.
 TFTD - what does this Figure mean & how can we draw it better ?
 In any case, fix font size/type.

Response Response Status C

ACCEPT IN PRINCIPLE.

OBE by 275

###

Comment 275 has the following response:
 ACCEPT IN PRINCIPLE.

Add TDL (Yair): Update text and Figures 33A-2 and 33A-3 to make them clear.

Cl 79 SC 79.3.2.2 P 219 L 36 # 283
 Yseboodt, Lennart Philips

Comment Type TR Comment Status A LLDP

Subsections 79.3.2.2 and 79.3.2.3 refer to fields that do not occur in any of the tables.
 The base standard also has this issue.
 It seems something went wrong when 802.3at was adopted.

SuggestedRemedy

No clue. TFTD.

Response Response Status C

ACCEPT IN PRINCIPLE.

Add TDL (Fred): Update Clause 79 to remove RFC references.