Cl **00** *SC* **0** *P* *L* # 211

Tremblay, David — Hewlett Packard Enter

Comment Type **E** *Comment Status* **X** *Pres: Tremblay1*

TODO 1-6 Topics:

Figure out how other clauses link to DTE/PoE.
How to address use of DTE in clause 145.

SuggestedRemedy

See tremblay_01_0517

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **1** *SC* **1.4.236a** *P* **24** *L* **24** # 128

Schindler, Fred — Seen Simply, Cisco, T

Comment Type **ER** *Comment Status* **D** *Definitions*

The existing text,
“A system consisting of one PSE and one PD that provides power across balanced twisted-pair cabling.”
is incorrect. Since the first release of clause 33 a valid system configuration has been,

Switch====endpoint-PSE====Midspan-PSE====PD

Sections in Clauses 33 and 145 provide requirements for this configuration. The solution for this concern also removes uncertainty about which device is doing the powering.

SuggestedRemedy

Replace the referenced sentence with,
"A system consisting of one PSE, which may source power, and one PD, which may consume power, across balanced twisted-pair cabling. (See IEEE Std 802.3, Clause 33)."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Your suggested remedy does not add clarity to the definition. If you remove the explanations in the commas, this is what you get:
"A system consisting of one PSE and one PD across balanced twisted-pair cabling. (See IEEE Std 802.3, Clause 33)."

TFTD FS
I disagree with this rejection. A definition should be correct.

IEEE 802.3-2015 permits system configurations:
Switch=======End point PSE====Midspan PSE====PD
Switch=======Midspan PSE====Endpoint PSE====PD

These systems have two PSEs within them. Requirements exist for these configurations—see 145.2.5.1.

The PoE definition indicates “one PSE”, while two PSEs are allowed in the above figures.

The modified text,
"A system consisting of one PSE, which may source power, and one PD, which may consume power, across balanced twisted-pair cabling.”

has only one PSE providing power but more may exist. I also believe the novice reader benefits from the concise clarification on which device sources the power and which device consumes the power.

Furthermore, I suspect comment #206 recently added the word “active” when defining the link section for the same reason.

Response DNA: I was pointing out that your suggested remedy is broken (it is not a proper sentence).

TFTD YD:
I agree with Fred. The reason for rejection is not clear. If the problem is poor wording, we can fix it. The intent of Fred proposal I guess, is to allow Midspan and Endspan configuration connected to the same PD while only one PSE is active.

Cl **1** *SC* **1.4.254** *P* **24** *L* **33** # 159

Stover, David Analog Devices

Comment Type **TR** *Comment Status* **X** *Pres: Stover2*

TODO 2.3: "Fix connection check, definitions, etc. for endspan/midspan conflicts."

SuggestedRemedy

See stover_02_0417.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **1** *SC* **1.4.254** *P* **24** *L* **33** # 249

Walker, Dylan Cisco

Comment Type **TR** *Comment Status* **D** *Definitions*

A link section connects a single PSE to a single PD in a valid PoE system.

(D2.3 TODO - Comments #271, #255, and #308)

SuggestedRemedy

Change:
"The portion of the link segment from a PSE to the PD."

To:
"The portion of the link segment from the PSE to the PD."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD FS
This may be affected by resolutions to comments 128, 250, and 204.

Cl **14** *SC* **14.4.416** *P* **24** *L* **50** # 129

Schindler, Fred Seen Simply, Cisco, T

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

This comment closes a TODO related to D2.3 #91 and #209 for Fred and Yair, located on page 198 145.3.8.6 L22. This work is also related to schindler_1_0915 that was updated by D1.7 #94.

The PD was addressed in my TODO provided for D2.3. This comment is related but is determining whether PSEs charge the PD bulk capacitance to a level that keeps the PSE current below ILIM-2P. The PD is a passive participant when the PSE drops and raises its VPSE. Therefore, the PSE needs to provide ILIM for a TLIM that charges the PD capacitance to its operating value. A class-4 PD is designed to work with the existing IEEE 802.3-2015 requirements.

SPICE simulations of the two PD tests in 145.3.8.6 show the systems interoperate correctly. The proposed solution clarifies PSE Type definitions to make TLIM-2P dependent on the PSE Type.

--------- details ----
Most people responding to a preview of this comment interpret the IEEE PSE Type definitions, which take the form “A PSE that supports …” (see Type definitions in 1.4.41x) as, “this PSE is capable of supporting class-x” while I interpreted the text as “this PSE is supporting class-x”. If a PSE assigns class-4 then the PSE is only supporting the assigned class. Therefore, a Type 3 and Type 4 PSE providing this power level fits the definition of Type-2 PSE using my interpretation. Note how the text is interpreted depends on the time when the definition is tested,
- currently supports (when it is driving the PD), which is my view;
- capable of supporting (before it is driving the PD), which is the view of others.

Type-2 and Type-3 PSEs provide a TLIM-2P of 10 ms and an ILIM-2P of at least 0.684A to a class-4 PD, which supports interoperation. A Type-4 PSE has a TLIM-2P of 6 ms. SPICE simulations show that when this PSE supplies 2x ILIM-2P to the class-4 PD with the maximum capacitance that it takes less than 6 ms to reach a PD operating point , which results in less than 2x ILIM-2P current demand.

Note that Type-4 PSEs need to support ILIM-2P on both pairsets to support interoperation with class-4 PDs, which is already a requirement for the PSE.

SuggestedRemedy

For Type-3 and Type-4 PSE definitions starting on page 24, replace “… that supports …” with “… that is capable of supporting …”.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

I really wish you had typed out the new suggested definitions (these things are important). For example the definition for Type 3 PSE goes from:

Type 3 PSE: A PSE that supports up to Class 6 power levels, supports short MPS, and may support 4-pair power. (See IEEE 802.3, Clause 145).

To:
Type 3 PSE: A PSE that is capable of supporting up to Class 6 power levels, supports short MPS, and may support 4-pair power. (See IEEE 802.3, Clause 145).

This makes it seem like all Type 3 PSEs have to be able to support Class 6. This is not true.

TFTD FS
Nice catch about Type-3 PSEs and Class 6. However, the concern about when the PSE Type definitions are applied remains.

The SPICE simulations were redone using 2-pair power with ILIM_2P of 0.684A, which is below ILIM by 4.2 ms and is acceptable. Therefore, all Types work as expected, which means this portion of the specification does not break if the PSE Type is incorrectly identified but I am not sure this remains true for all parts of the specification.

Existing:
"1.4.418ad Type 4 PSE: A PSE that supports up to Class 8 power levels, short MPS, and 4-pair power. (See IEEE 802.3, Clause 145)."

If I have a Type-4 PSE capable of class-8 power, the PSE supports up to Class-8 power. When this PSE assigns class-4 the PSE supports class-4 power. It is required not to support Class-8 power.

This specification uses behavior to define things and provide requirements. When I apply the PSE definition before power-on I get the correct answer, Type 4, when I apply the definition after power-on I get an incorrect answer, not Type 4.

Proposed:
"1.4.418ad Type 4 PSE: A PSE that is capable of supporting up to Class 8 power levels, short MPS, and 4-pair power. (See IEEE 802.3, Clause 145)."

The definition for a Type-3 PSE can remain unchanged as I am not aware of behavior that is depended on operational Type used. For example, a Type-3 PSE may power class-5 PDs and the PSE Type remains Type-3 for this case.

TFTD YD
In this comment there is two parts. The first part is Fred saying that there is no problem with TLIM etc. The 2nd part is not clear to me to, so it has to be at least ACCEPT IN PRINCIPLE with the details of what we accept etc.

Cl **30** *SC* **30.9** *P* **34** *L* **48** # 290

Yseboodt, Lennart Philips

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

"Editor's Note: 30.9 through 30.12 is included for the convenience of the reader and shall be removed prior to sponsor ballot."

The time has probably come...

SuggestedRemedy

Remove unmodified subclauses from Clause 30 and remove this note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD YD
Wait to see that there are no further changes in this cycle and then remove the note

---

Cl **30** *SC* **30.9.1.1.10** *P* **37** *L* **50** # 6

Anslow, Pete Ciena

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

If subclause 30.9.1.1.10 is deleted, then the row for aPSEShortCounter in Table 30-4 has to be deleted.

SuggestedRemedy

Add instructions under 30.2.5 to delete the row for aPSEShortCounter in Table 30-4 .

Proposed Response *Response Status* **W**

TFTD

Cl **30** *SC* **30.12.2.1.18z4** *P* **50** *L* **10** # 212

Tuenge, Jason Pacific Northwest Nati

Comment Type **T** *Comment Status* **X** *Pres: Yseboodt6*

For an accuracy of 2^-n bits, an effective resolution of at least 2^-n is required; however, 2^-n resolution does not ensure accuracy of 2^-n. Significant bits ("SigBits") seems better suited than "Accuracy" in "aLldpXdot3LocMeasVoltageAccuracy." Also, accuracy is typically specified as ± the sum of a percentage (of reading or scale) and a fixed tolerance. It isn't clear how this relates to the "number of accurate bits" (or bits of accuracy).

SuggestedRemedy

Change "aLldpXdot3LocMeasVoltageAccuracy" to "aLldpXdot3LocMeasVoltageSigBits" and change "accurate bits" to "useful significant bits" (see Table 79-7b). Also clarify how accuracy and resolution are calculated from significant bits. This would help to ensure a truly effective resolution is reported, and encourage harmonization of accuracy claims. For example, should 7-bit resolution mean 8% accuracy relative to reading or full scale? Is more information required to express accuracy as ±(X%+Y)?

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **30** *SC* **30.12.2.1.18z5** *P* **50** *L* **20** # 213

Tuenge, Jason Pacific Northwest Nati

Comment Type **T** *Comment Status* **X** *Pres: Yseboodt6*

Same comment for Current as for Voltage above.

SuggestedRemedy

Same change for Current as for Voltage above.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **30** *SC* **30.12.2.1.18z6** *P* **50** *L* **29** # 214

Tuenge, Jason Pacific Northwest Nati

Comment Type **T** *Comment Status* **X** *Pres: Yseboodt6*

Same comment for Power as for Voltage above.

SuggestedRemedy

Same change for Power as for Voltage above.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **30** *SC* **30.12.2.1.18z7** *P* **50** *L* **38** # 215

Tuenge, Jason Pacific Northwest Nati

Comment Type **T** *Comment Status* **X** *Pres: Yseboodt6*

Same comment for Energy as for Voltage above.

SuggestedRemedy

Same change for Energy as for Voltage above.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **30** *SC* **30.12.2.1.18z8** *P* **50** *L* **47** # 216

Tuenge, Jason Pacific Northwest Nati

Comment Type **E** *Comment Status* **X** *Pres: Yseboodt6*

No units are specified for aLldpXdot3LocVoltageMeasurement.

SuggestedRemedy

Add reference to Table 79–7b—Measurements.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **30** *SC* **30.12.2.1.18z9** *P* **51** *L* **4** # 217
Tuenge, Jason Pacific Northwest Nati

Comment Type **E** *Comment Status* **X** *Pres: Yseboodt6*

Same comment for Current as for Voltage above.

SuggestedRemedy

Same change for Current as for Voltage above.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **30** *SC* **30.12.2.1.18z10** *P* **51** *L* **13** # 218
Tuenge, Jason Pacific Northwest Nati

Comment Type **E** *Comment Status* **X** *Pres: Yseboodt6*

Same comment for Power as for Voltage above. Compare with aLldpXdot3LocPDRequestedPowerValue, aLldpXdot3LocPSEAllocatedPowerValue, etc.

SuggestedRemedy

Same change for Power as for Voltage above.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **30** *SC* **30.12.2.1.18z11** *P* **51** *L* **22** # 219
Tuenge, Jason Pacific Northwest Nati

Comment Type **E** *Comment Status* **X** *Pres: Yseboodt6*

Same comment for Energy as for Voltage above.

SuggestedRemedy

Same change for Energy as for Voltage above.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **30** *SC* **30.12.3.1.18z4** *P* **61** *L* **1** # 220
Tuenge, Jason Pacific Northwest Nati

Comment Type **T** *Comment Status* **X** *Pres: Yseboodt6*

See related comments regarding Local subclause 30.12.2.1.18z4 above.

SuggestedRemedy

See related changes proposed for Local subclause 30.12.2.1.18z4 above.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **30** *SC* **30.12.3.1.18z5** *P* **61** *L* **12** # 221
Tuenge, Jason Pacific Northwest Nati

Comment Type **T** *Comment Status* **X** *Pres: Yseboodt6*

Same comment for Current as for Voltage above.

SuggestedRemedy

Same change for Current as for Voltage above.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **30** *SC* **30.12.3.1.18z6** *P* **61** *L* **22** # 222
Tuenge, Jason Pacific Northwest Nati

Comment Type **T** *Comment Status* **X** *Pres: Yseboodt6*

Same comment for Power as for Voltage above.

SuggestedRemedy

Same change for Power as for Voltage above.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **30** *SC* **30.12.3.1.18z7** *P* **61** *L* **32** # 223
Tuenge, Jason Pacific Northwest Nati

Comment Type **T** *Comment Status* **X** *Pres: Yseboodt6*

Same comment for Energy as for Voltage above.

SuggestedRemedy

Same change for Energy as for Voltage above.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **30** *SC* **30.12.3.1.18z8** *P* **61** *L* **42** # 224
Tuenge, Jason Pacific Northwest Nati

Comment Type **E** *Comment Status* **X** *Pres: Yseboodt6*

No units are specified for aLldpXdot3RemVoltageMeasurement.

SuggestedRemedy

Add reference to Table 79–7b—Measurements.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **30** *SC* **30.12.3.1.18z9** *P* **61** *L* **51** # 225
Tuenge, Jason Pacific Northwest Nati

Comment Type **E** *Comment Status* **X** *Pres: Yseboodt6*

Same comment for Current as for Voltage above.

SuggestedRemedy

Same change for Current as for Voltage above.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **30** *SC* **30.12.3.1.18z10** *P* **62** *L* **7** # 226
Tuenge, Jason Pacific Northwest Nati

Comment Type **E** *Comment Status* **X** *Pres: Yseboodt6*

Same comment for Power as for Voltage above.

SuggestedRemedy

Same change for Power as for Voltage above.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **30** *SC* **30.12.3.1.18z11** *P* **62** *L* **16** # 227
Tuenge, Jason Pacific Northwest Nati

Comment Type **E** *Comment Status* **X** *Pres: Yseboodt6*

Same comment for Energy as for Voltage above.

SuggestedRemedy

Same change for Energy as for Voltage above.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **33** *SC* **33.2.2** *P* **64** *L* **4** # 14
Anslow, Pete Ciena

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

"in the caption of Figure 33-5" should be "in the title of Figure 33-5"

SuggestedRemedy

Change "caption" to "title"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD YD
Figure 33-7 is in clause 33. Figure 33-7 doesn't describe in its title those Midspans supporting 2.5, 5 and 10GBASET.

Cl **33** *SC* **33.4.9.1** *P* **67** *L* **7** # 115

Maguire, Valerie Siemon

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

An explanation of Connector Midspan PSE and how it is implemented within a link segment is needed. Possible misuse of quotes, too. Apply change to clause 145.4.9.1 if allowed as part of this ballot cycle.

SuggestedRemedy

Replace, "The Midspan PSE equipment to be inserted as “connector” or “telecom outlet” shall meet the following transmission parameters."

with, "A connector Midspan PSE replaces one of the connectors in the link segment and shall meet the following transmission parameters."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

ALSO, Apply change to clause 145.4.9.1

TFTD LY
For Clause 33 we are changing a legacy requirement. Just checking the meaning is precisely the same.

Cl **33** *SC* **33.4.9.1.4** *P* **68** *L* **47** # 119

Maguire, Valerie Siemon

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

An explanation of Cord Midspan PSE and how it is implemented within a link segment is needed. This sentence can be merged with the one below regarding transmission performance to correct the misuse of the word "cable". It is not necessary to introduce the term "jumper" here since there are no longer any external transmission references. Clarify that the subject pairs are those transmiting and recieving data, not power. Apply change to clause 145.4.9.4 if allowed as part of this ballot cycle.

SuggestedRemedy

Use revision marks as necessary to show the following text in underline and all old text in strikethrough.

Replace, "Replacing the work area or equipment cable with a cable that includes a Midspan PSE should not alter the requirements of the cable. This cable shall meet the requirements of this clause and the specifications for a (jumper) cord as specified for insertion loss, NEXT, and return loss for the transmit and receive pairs, as shown in Table 33–20a."

with, "A cord Midspan PSE replaces an equipment or work area cord in a link segment and shall meet or exceed the insertion loss, NEXT, and return loss values specified Table 33–20a for all data transmitting pairs."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

ALSO, Apply change to clause 145.4.9.4

TFTD LY
Like 115, legacy 'shall' text is being changed, double check meaning.

Cl **33** *SC* **33.4.9.1.7** *P* **69** *L* **38** # 109

Jones, Chad Cisco

Comment Type **E** *Comment Status* **D** *AES*

To ensure the total alien NEXT loss and alien FEXT loss coupled between link segments is limited, multiple disturber alien near-end crosstalk (MDANEXT) loss and multiple disturber alien FEXT (MDAFEXT) loss is specified.

SuggestedRemedy

change to: To bound the total alien NEXT
loss and alien FEXT loss coupled between link segments, multiple disturber alien near-end crosstalk (MDANEXT) loss and multiple disturber alien FEXT (MDAFEXT) loss is specified.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD LY
Better:
"To limit the total alien NEXT loss and alien FEXT loss coupled between link segments, multiple disturber alien near-end crosstalk (MDANEXT) loss and multiple disturber alien FEXT (MDAFEXT) loss are specified."

Cl **79** *SC* **79** *P* **73** *L* **4** # 292

Yseboodt, Lennart Philips

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

"Editor's Note: Portions of Clause 79 are included for the convenience of the reader and shall be removed prior to sponsor ballot if they have not been modified."

The time has probably come...

SuggestedRemedy

Remove unmodified subclauses from Clause 79 and remove this note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD YD
Wait to see that there are no further changes in this cycle and then remove the note

Cl **79** *SC* **79.3.2** *P* **75** *L* **48** # 293

Yseboodt, Lennart Philips

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

"Type 1 and Type 2 devices shall not support the Type 3 and Type 4 extension."

This requirement was added last cycle.
It is unclear what the purpose is.
An obvious side-effect is that T1/2 PDs cannot use LLDP to indicate they support 4-pair, which was the whole point of the PD 4PID bit.
It also precludes T1/2 PDs to make use of the new LLDP features (Autoclass, shutdown, ...).

SuggestedRemedy

Remove quoted text.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD HS
The proposed removal actually adds functionality to Type 1 and Type 2 devices. This is deeply out of scope.

Cl **79** *SC* **79.3.2.5** *P* **79** *L* **16** # 294

Yseboodt, Lennart — Philips

Comment Type **TR** *Comment Status* **D** *LLDP*

"The PD requested power value field shall contain the PD's requested power value defined in Table 79-5, for Type 1, Type 2, and single-signature Type 3 and Type 4 PDs. The fields for PD requested power value shall be set to the sum of PD requested power value Mode A and PD requested power value Mode B in Table 79- 6a, for Type 3 and Type 4 dual-signature PDs."

This makes use of this field mandatory for Type 1 PDs, which was not the intention.
We really only need to specify what dual-sigs need to do.

SuggestedRemedy

"The PD requested power value field shall contain the PD's requested power value defined in Table 79-5."
Append after:
"Dual-signature Type 3 and Type 4 PDs shall use the sum of the PD requested power value Mode A and Mode B fields as the value for this field."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD YD
Need to verify if it affects the concept we agree on.

TFTD HS
This remedy treats SS and DS behaviors as if the DS behavior simply adds to the SS behaviors. Instead the field acts one way for SS and another way for DS. The text needs to reflect this "mux" behavior.

Propose (merged in Fred's comment 131 remedy)

-- just delete the Type 1 which Lennart called out.

The PD requested power value field shall be set to the PD requested power value defined in Table 79-5, for Type 2, and single-signature Type 3 and Type 4 PDs. The fields for PD requested power value shall be set to the sum of PD requested power value Mode A and PD requested power value Mode B in Table 79- 6a, for Type 3 and Type 4 dual-signature PDs.

TFTD DS
This does not solve the stated problem, as "the PD" (per remedy) in the general case includes "Type 1 PDs". Instead, modify text to indicate this requirement only applies to LLDP-enabled PDs.

Cl **79** *SC* **79.3.2.5** *P* **79** *L* **16** # 131

Schindler, Fred — Seen Simply, Cisco, T

Comment Type **ER** *Comment Status* **D** *LLDP*

The text,
“The PD requested power value field shall contain the PD’s requested power value defined in Table 79–5, for Type 1, Type 2, and single-signature Type 3 and Type 4 PDs. The fields for PD requested power value shall be set to the sum of PD requested power value Mode A and PD requested power value Mode B in Table 79–6a, for Type 3 and Type 4 dual-signature PDs.”

Incorrectly reference the field of Table 79-5, which is PD requested power value. The fix removes PD’s and replaces it with PD.

SuggestedRemedy

Replace the called out text with,
“The PD requested power value field shall contain the PD requested power value defined in Table 79–5, for Type 1, Type 2, and single-signature Type 3 and Type 4 PDs. The fields for PD requested power value shall be set to the sum of PD requested power value Mode A and PD requested power value Mode B in Table 79–6a, for Type 3 and Type 4 dual-signature PDs.”

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Merge with comment 294.

TFTD LY
I don't see how I can merge this. OBE to 294.

TFTD YD
The subject of comment #131 (PD's vs PD) is different than the subject of comment #294. ACCEPT this comment as is and do not OBE it to #294. Regarding #294 I need to verify if it affects the concept we agree on.

Cl **79** *SC* **79.3.2.5** *P* **79** *L* **40** # 295

Yseboodt, Lennart Philips

Comment Type **TR** *Comment Status* **D** *LLDP*

D2.4: "PD requested power value" is the maximum input average power (see 33.3.8.2 and 145.3.8.2) the PD may draw.
D2.3: "PD requested power value" is the maximum input average power (see 33.3.8.2 and 145.3.8.2) the PD wants to draw.

This was changed as part of the many changes to dual-sig LLDP and was overlooked during review.
The current version imposes a requirement on the PD power consumption, something that does not belong in Clause 79.
'wants to' gives personality to the PD (<= just for Fred!)

SuggestedRemedy

Replace by:
"PD requested power value" is the maximum input average power (see 33.3.8.2 and 145.3.8.2) the PD intends to draw.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD CJ
295: "PD requested power value" is the maximum input average power (see 33.3.8.2 and 145.3.8.2) the PD intends to draw." This also humanizes a PD.
AIP, change to: ""PD requested power value" is the maximum input average power (see 33.3.8.2 and 145.3.8.2) the PD is capable to draw."

Response DNA:
AIP, change to: ""PD requested power value" is the maximum input average power (see 33.3.8.2 and 145.3.8.2) the PD is capable of drawing."

TFTD YD
Keep 'may". Not clear what is the problem. This is the definition to PD requested power value and is correct regardless if it is clause 145 or 79. I am worry that when DLL is used, users may interpret that they can request more power than this vale.

TFTD HS
The word "may" is proposed to be replaced by "intends to". The description complains about "wants to", which is not even present. intention is a human trait.

Proposed reject

TFTD DS
I don't understand the distinction, here. "may" (the text being modified) is not a statement of requirement. This does not seem to be a required change, going in to sponsor ballot…

Cl **79** *SC* **79.3.2.6** *P* **79** *L* **46** # 296

Yseboodt, Lennart Philips

Comment Type **TR** *Comment Status* **D** *LLDP*

"The PSE allocated power value field shall contain the PSE's allocated power value defined in Table 79-6 for PSEs connected to single-signature PDs and Type 1 and Type 2 PDs."

Similar issue as for the PD requested power.

SuggestedRemedy

"The PSE allocated power value field shall contain the PSE's allocated power value defined in Table 79-6."
Append after:
"Type 3 and Type 4 PSEs connected to a dual-signature PD shall use the sum of the PSE allocated power value Alternative A and Alternative B fields as the value for this field."

Delete (line 49-54):
"The sum of the PSE allocated power value Alternative A field and the PSE allocated power value Alternative B field shall be provided in the PSE allocated power value field for a dual-signature PD for Type 3 and Type 4 PSEs. The sum of the PSE allocated power value Alternative A field and the PSE allocated power value Alternative B field may be provided in the PSE allocated power value field for a dual- signature PD for Type 1 and Type 2 PSEs."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD YD
Which issue? Please repeat the issue per comment.

TFTD HS
Requirement created on a Type 1 / 2 when connected to a dual-signature PD, of which they have no knowledge.

TFTD DS
Similar response as for #294. Also, Type 1, Type 2 PSE behavior "when connected to x-signature" is a requirement on Type 1, Type 2 PSEs that supposes those PSEs have any knowledge of PD "signature". Do not add requirements to Type 1, Type 2 PSEs.

Cl **79** *SC* **79.3.2.6** *P* **79** *L* **46** # 132

Schindler, Fred — Seen Simply, Cisco, T

Comment Type **ER** *Comment Status* **D** *LLDP*

The text,
"The PSE allocated power value field shall contain the PSE's allocated power value defined in Table 79–6 for PSEs connected to single-signature PDs and Type 1 and Type 2 PDs."

Incorrectly reference the field of Table 7-6, which should be PSE allocated power value.

SuggestedRemedy

Replace the called out text with,
"The PSE allocated power value field shall contain the PSE allocated power value defined in Table 79–6 for PSEs connected to single-signature PDs and Type 1 and Type 2 PDs."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by 296

TFTD YD
The subject of comment #132 (PSE's vs PSE) is different than the subject of comment #296. ACCEPT this comment as is and do not OBE it to #296. Regarding #296 I need to verify if it affects the concept we agree on.

Cl **79** *SC* **79.3.2.6** *P* **79** *L* **50** # 148

Stewart, Heath — Analog Devices

Comment Type **TR** *Comment Status* **D** *LLDP*

Awkward and backwards. Implies requirement is on PD when I think it is on PSE.
The sum of the PSE allocated power value Alternative A field and the PSE allocated power value Alternative B field shall be provided in the PSE allocated power value field for a dual-signature PD for Type 3 and Type 4 PSEs.

SuggestedRemedy

Change
for a dual-signature PD for Type 3 and Type 4 PSEs
To
for Type 3 and Type 4 PSEs connected to dual-signature PDs

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by 296

TFTD YD
TFDT: The comment and the remedy of #296 is not clear so I am not sure that #148 should OBE to #296

TFTD HS
Propose AIP, merged with part of #133 which did improve grammar.

defined in Table 79-6 for Type 3 and Type 4 PSEs connected to a dual-signature PD

Cl **79** *SC* **79.3.2.6** *P* **79** *L* **51** # 149

Stewart, Heath — Analog Devices

Comment Type **TR** *Comment Status* **D** *LLDP*

This appears to create a requirement on existing Type 1 and Type 2 PSEs.

SuggestedRemedy

Delete
The sum of the PSE allocated power value Alternative A field and the PSE allocated power value Alternative B field may be provided in the PSE allocated power value field for a dual-signature PD for Type 1 and Type 2 PSEs.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by 296

TFTD HS
Propose accept. The deleted text would create a new requirement on Type 1/2 PSEs. (Implying they are now 4-pair PSEs)

Cl **79** *SC* **79.3.2.6a** *P* **80** *L* **30** # 297

Yseboodt, Lennart Philips

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

"If Mode (X) is non-active while the other mode is active, the inactive PD requested power value Mode (X) field value shall be set to 0."

What is this trying to do ? The PD may wish to ask for power on an unpowered Mode...

SuggestedRemedy

Strike sentence.

Proposed Response *Response Status* **W**

TFTD

I believe this is Yair's way of saying that if a DS PD is powered over 2 pairs, then it shall request 0 over the unpowered pair.

Cl **79** *SC* **79.3.2.6a** *P* **80** *L* **46** # 299

Yseboodt, Lennart Philips

Comment Type **TR** *Comment Status* **D** *LLDP*

""Dual-signature PD requested power value Mode A" and "Dual-signature PD requested power value Mode B" are the maximum input average power levels (see 145.3.8.2) the PD may draw for the respective pairset."

This semi-requirement does not belong here in Clause 79. Word in similar manner as for single-signature.

SuggestedRemedy

""Dual-signature PD requested power value Mode A" and "Dual-signature PD requested power value Mode B" are the maximum input average power levels (see 145.3.8.2) the PD intends to draw for the respective pairset."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD YD
"Keep 'may"". Not clear what is the problem. This is the definition for PD requested power value and is correct regardless if it is clause 145 or 79. I am worry that when DLL is used, users may interpret that they can request more power than this value."

TFTD HS
The word "may" is proposed to be replaced by "intends to". The description complains about "wants to", which is not even present. intention is a human trait.

Proposed reject

TFTD DS
I don't understand the distinction, here. "may" (the text being modified) is not a statement of requirement. This does not seem to be a required change, going in to sponsor ballot…

Cl **79** *SC* **79.3.2.6b** *P* **81** *L* **24** # 151

Stewart, Heath — Analog Devices

Comment Type **ER** *Comment Status* **D** *LLDP*

Redundant shall. The previous shall covers this already as shown below.
A PSE providing power to a Type 1, Type 2, and single-signature Type 3 and Type 4 PD, place 0 in the “PSE allocated power value Alternative A” and “PSE allocated power value Alternative B” fields.

SuggestedRemedy

Delete
The fields for PSE allocated power value Alternative A and PSE allocated power value Alternative B in Table 79–6b shall be set to value 0, for PSEs supporting single-signature PDs.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD YD
If the proposed text is going to be deleted, we need to add reference in lines 20-23 to Table 79-6b

Cl **79** *SC* **79.3.2.6c** *P* **82** *L* **15** # 135

Schindler, Fred — Seen Simply, Cisco, T

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

Changes made during D2.3 to address comment #406 change LLDP behavior requirements because Table 79-6c codes changed. Draft 2.4 does not appear to follow the #406 comment response. Comment #406 incorrectly raises concerns about Class 0 values. Class 0 may be reported by legacy Types. The changes made conflict with what text requirements on page 81 lines 42 and 49, for the Dual-signature-PD TLVs.

Page 81, Lines 42 and 49 both indicate,
“PSEs connected to a Type 1, Type 2 or single-signature PD set this field to value 0.”

Requirements for the TLV covered by Table 79-6d result in system single and dual signature details so duplicating this in Table 79-6c is redundant. Table 79-6c provides class details for the system. The TLV processing code may also infer PD single and dual status from which field, covered by Table 79-6c, is made 0.

SuggestedRemedy

On page 82, L14 and L23
replace “111 = Single-signature PD” with “111 = Reserved/Ignore”

On page 82, L32
replace “111 = Dual-signature PD” with “111 = Reserved/Ignore”

Proposed Response *Response Status* **W**

TFTD

TFTD LY
We should change the text on page 81, line 42 and 49 to read "PSEs connected to a Type 1, Type 2 or single-signature PD set this field to value 7." so it matches with the table. While a single-signature PD may report Class 0, dual-signature's do not have Class 0 defined and as such cannot report that as the requested Class..

Cl **79** *SC* **79.3.2.6g** *P* **85** *L* **3** # 302

Yseboodt, Lennart — Philips

Comment Type **TR** *Comment Status* **X** *Pres: Yseboodt4*

We can add a time delay field to the request power down LLDP field that makes the PSE turn the PD back on after this delay.

SuggestedRemedy

Adopt yseboodt_04_0517_powerdowndelay.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **Table** *SC* **Table 79–7b** *P* **86** *L* **50** # 228
Tuenge, Jason Pacific Northwest Nati

Comment Type **E** *Comment Status* **X** *Pres: Yseboodt6*

See related comments regarding subclause 30.12.2.1.18z4 above. Also clarify that the integer (rather than each bit) should be 1 to 16.

SuggestedRemedy

Change "Voltage accuracy" to "Voltage resolution." Also change "these bits" to "this integer."

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **Table** *SC* **Table 79–7b** *P* **86** *L* **52** # 229
Tuenge, Jason Pacific Northwest Nati

Comment Type **E** *Comment Status* **X** *Pres: Yseboodt6*

Same comment for Current as for Voltage above.

SuggestedRemedy

Same change for Current as for Voltage above.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **Table** *SC* **Table 79–7b** *P* **87** *L* **5** # 230
Tuenge, Jason Pacific Northwest Nati

Comment Type **E** *Comment Status* **X** *Pres: Yseboodt6*

Same comment for Power as for Voltage above.

SuggestedRemedy

Same change for Power as for Voltage above.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **Table** *SC* **Table 79–7b** *P* **87** *L* **8** # 231
Tuenge, Jason Pacific Northwest Nati

Comment Type **E** *Comment Status* **X** *Pres: Yseboodt6*

See related comments regarding subclause 30.12.2.1.18z7 above. Also clarify that the integer (rather than each bit) should be 1 to 32.

SuggestedRemedy

Same change for Energy as for Voltage above.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.1.3** *P* **101** *L* **21** # 255
Yseboodt, Lennart Philips

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

"PSEs and PDs may be of a Type defined in Clause 33, Clause 145, or a combination of both."

Could be interpreted to mean a device can be multiple Types, which is not what is meant here.

SuggestedRemedy

"The PSE and PD can be of a Type defined in Clause 33 or Clause 145 in any combination."

(this was tricky to formulate as intended, please check)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD FS
I still do not understand the meaning of this sentence so we should TFTD.

TFTD CJ
needs to be AIP: "The PSE and PD can be of a Type defined in Clause 33 or Clause 145, in any combination." (added the comma after 145).

Cl **145** *SC* **145.1.3** *P* **101** *L* **21** # 250

Walker, Dylan Cisco

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

"A power system consists of a single PSE, a single PD, and the link section connecting them."

This point needs to be further emphasized.

(D2.3 TODO - Comments #271, #255, and #308)

SuggestedRemedy

Change:
"A power system consists of a single PSE, a single PD, and the link section connecting them."

To:
"A valid power system consists only of a single PSE, a single PD, and the link section connecting them."

Proposed Response *Response Status* **W**

TFTD

Cl **145** *SC* **145.1.3** *P* **101** *L* **31** # 203

Thompson, Geoff GraCaSI S.A.

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

Current text in P802.3bt/D2.4: Channel pairset maximum DC loop resistance (RCh, Ω)

SuggestedRemedy

Proposed text for P802.3bt/D2.5: Link section pairset maximum DC loop resistance (RLS, Ω)

Proposed Response *Response Status* **W**

TFTD

I have accepted all of the comments changing "channel" to "link section" so I think this makes sense. However, it is slightly odd to have different nomenclature for clause 33 and clause 145.

See 186

Cl **145** *SC* **145.1.3** *P* **102** *L* **22** # 31

Beia, Christian ST Microelectronics

Comment Type **T** *Comment Status* **D** *Pres: Stover1*

"VPD is voltage at the PD PI measured between any positive conductor of a pair and any negative conductor of the corresponding pair.
VPSE is voltage at the PSE PI measured between any positive conductor of a pair and any negative conductor of the corresponding pair."
They are not the same definitions as used in Clause 33.
The use of "pairset" is more clear and coherent

SuggestedRemedy

Replace the called out text with:

"VPD is voltage at the PD PI measured between any positive conductor of a pairset and any negative conductor of the same pairset.

VPSE is voltage at the PSE PI measured between any positive conductor of a pairset and any negative conductor of the same pairset."

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.1.3** *P* **102** *L* **22** # 158

Stover, David Analog Devices

Comment Type **TR** *Comment Status* **X** *Pres: Stover1*

TODO 2.3: "Update VPSE, VPD, and PI definitions to include 2-pair and 4-pair. Remove 'at the XXX PI' from our draft."

SuggestedRemedy

See stover_01_0417.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.1.3.2** *P* **102** *L* **42** # 204

Thompson, Geoff GraCaSI S.A.

Comment Type **ER** *Comment Status* **D** *Channel*

Current text in P802.3bt/D2.4: 145.1.3.2 Channel requirements

SuggestedRemedy

Proposed text for P802.3bt/D2.5: 145.1.3.2 Link section requirements

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

This comment will be used to accept all comments related to the change of "channel" to "link section". All comments with "REF 204" in the response shall be considered accepted in principle and the editor is given license to replace occurance of "channel" with "link section" while considering the surrounding text. The comment should be used as a guide to how to do that properly.

TFTD FS
Clause 33 used “channel” because use of this term covered connectors and patch cords in the path from the active PSE to the PD. The IEEE does not have a PoE application definition for channel. The definition for link segment is silent on what the connection between the active PSE and PD consists of. This is a serious omission. The Task force could create a definition for PoE channel that is a superset of the cable standard definition of channel. The main difference between these is that the cable standard definition omits the connector at the end of the media.

Also related to 209, where overall was added.

TFTD YD
"Keep it TFTD. It cant be REF204. It is bigger text change. I propose different text: Change to ""Within Clause 145 and its annexes, the term link section refers to the point-to-point medium connection between two and only two active PowerInterfaces (PIs)."""

TFTD YD
"I disagree with the license given to the editor in regarding this comment. It was agreed last meeting that Geoff will generate individual comment for each ""channel"" occurrence he wants to replace with Link Section including the effect on the surrounding text. If Geoff didn't do it, I would like to ask him to resend all comments marked REF204.Other issue is that I am not sure that to replace ""channel"" to ""link section"" based on Geoff Thompson presentation arguments is valid. See my response to all REF204 comments."

TFTD YD
"See darshan_13_0517.pdf. After reading all Geoff comments and reading again his presentation on the subject from March 2017 and talking with cabling guys, I have doubts that changing all occurrences with “channel” to “link section” is the correct thing to do. Currently I am checking the details with cabling experts to be sure of that.I believe that this is critical issue and we need to check it carefully before doing this. Per Geoff presentation, I am not sure right now that he had valid points there to make such significant changes that may affect Midspans as well."

Cl **145** *SC* **145.1.3.2** *P* **102** *L* **47** # 206

Thompson, Geoff GraCaSI S.A.

Comment Type **ER** *Comment Status* **D** *Channel*

Current text in P802.3bt/D2.4: Link sections for all Types shall comply with the resistance unbalance requirements for twisted-pair cabling as specified in ISO/IEC 11801:2002 and ANSI/TIA-568-C.2. Refer to Annex 33A for more information including 4-pair operation channel requirements for pair-to-pair resistance unbalance.

SuggestedRemedy

Proposed text for P802.3bt/D2.5: Link sections for all Types shall comply with the resistance unbalance requirements for twisted-pair cabling as specified in ISO/IEC 11801:2002 and ANSI/TIA-568-C.2. Refer to Annex 33A for more information including the requirements for 4-pair operation pair-to-pair resistance unbalance.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to:
Link sections for all Types shall comply with the resistance unbalance requirements for twisted-pair cabling as specified in ISO/IEC 11801:2002 and ANSI/TIA-568-C.2. Refer to Annex 33A for more information including the requirements for pair-to-pair resistance unbalance when operating over 4 pairs.

TFTD, check annex reference

TFTD YD
TFTD: The proposal from David is OK however I am not sure now that the use of link section is the best option. I am checking if we can keep using "channel" or at "link segment".

Cl **145** *SC* **145.2.1** *P* **103** *L* **20** # 101

Jones, Chad Cisco

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

the sentence: "A PSEs can be categorized as either a Type 1, Type 2, Type 3 or Type 4 PSE." improper tense.

SuggestedRemedy

change to: "A PSE can be categorized as either a Type 1, Type 2, Type 3 or Type 4 PSE."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD CJ
need to be AIP: change to: "A PSE can be categorized as either a Type 1, Type 2, Type 3, or Type 4 PSE." (remedy missing oxford comma)

Response DNA: Can't believe I missed that (+1 for CJ).

TFTD DS
Missing comma: "... Type 3, or Type 4 PSE."

Cl **145** *SC* **145.2.1** *P* **103** *L* **23** # 256

Yseboodt, Lennart Philips

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

"Type 1, Type 2, Type 3, and Type 4 PSEs interoperate with Type 1, Type 2, Type 3, and Type 4 PDs, subject to power limitations. See 145.2.7. The PD may then operate in a reduced power mode."

SuggestedRemedy

Remove the last two sentences.

Why ? While they are not wrong, they raise questions that at this point in the text are unneeded.
Questions that are then not answered unless we read through 145.2.7.
The main statement is that PSEs and PDs will interoperate. Let's leave the power demotion stuff for the classification section.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD YD
I like to keep the text there. It will raise more question at this point if we remove it because it explains how PD class 8 (71.3 WATT) may operate with Type 1 PSE.

Response DNA: The text is wrong. PDs shall then operate in a reduced power mode (they are required to obey assigned class).

TFTD DS
"power limitations" could use a reference. Propose keep "See 145.2.7."

Cl **145** *SC* **145.2.1** *P* **103** *L* **26** # 153

Stewart, Heath Analog Devices

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

Need to add Type 3 and Type 4 for clarity

SuggestedRemedy

Replace
Table 145–2 summarizes the supported parameters of PSEs.
With
Table 145–2 summarizes the supported parameters of Type 3 and Type 4 PSEs.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD CJ
reject. Page 99, line 18: “References in this clause to PSEs and PDs without a Type qualifier refer exclusively to Type 3 and Type 4 devices.”

Cl **145** *SC* **145.2.5.1.1** *P* **112** *L* **41** # 234

Walker, Dylan Cisco

Comment Type **ER** *Comment Status* **D** *PSE SD*

Since another comment seeks to remove the explicit ping pong behavior from the SD, a note to provide a hint to the reader that Alternative role reversal is probably a good idea (without going into the gory details) seems appropriate.

(D2.3 TODO - Comment #247)

SuggestedRemedy

Insert:
"NOTE—During 4-pair operation, it may be necessary to swap the roles of Alternative A and Alternative B in IDLE in order to detect a PD."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD HS
Defining a system as one pse one cable and one PD is at odds with the justification of this statement. Which is it?

TFTD whether a 1-1-1 system needs to alternate.

Cl **145** *SC* **145.2.5.4** *P* **114** *L* **20** # 235

Walker, Dylan Cisco

Comment Type **TR** *Comment Status* **D** *PSE SD*

Stating that the other Alternative is assigned the Secondary Alternative role is redundant for 4-pair operation and misleading for 2-pair operation, where the only active Alternative is still granted the role of Primary despite a nonexistent Secondary.

(D2.3 TODO - Comment #247)

SuggestedRemedy

Change:
"A variable used to select which Alternative assumes the role of Primary in the state diagram."
"a: Alternative A is assigned Primary, and Alternative B is assigned Secondary."
"b: Alternative B is assigned Primary, and Alternative A is assigned Secondary."

To:
"A variable used to select which Alternative assumes the role of Primary Alternative in the state diagram."
"a: Alternative A is assigned Primary Alternative. When operating over 4 pairs, Alternative B is assigned Secondary Alternative."
"b: Alternative B is assigned Primary Alternative. When operating over 4 pairs, Alternative A is assigned Secondary Alternative."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD DW
Heath pointed out that given the variable name “alt_pri”, it’s implied that Alternative A or Alternative B is being assigned to it, not the other way around. As a result, the definitions of the values are at best misleading as a result of the usage of the word “assigned.”

On the other hand, in the variable definition and subclause 145.2.6.1, we describe Primary and Secondary as roles that the actual Alternatives assume while the state machine runs, so it feels more natural to state that Alternative A takes on a specific role.

Ultimately, we determined that we can reconcile this by avoiding the word “assigned” within the definitions of the values.

Change Proposed Remedy:

“A variable used to select which Alternative assumes the role of Primary Alternative in the state diagram.
a: Alternative A is assigned Primary Alternative. When operating over 4 pairs, Alternative B is assigned Secondary Alternative.
b: Alternative B is assigned Primary Alternative. When operating over 4 pairs, Alternative A is assigned Secondary Alternative.”

To Enhanced Proposed Remedy:

"A variable used to select which Alternative assumes the role of Primary Alternative in the state diagram.
a: Alternative A assumes the role of Primary Alternative. When operating over 4 pairs, Alternative B assumes the role of Secondary Alternative.
b: Alternative B assumes the role of Primary Alternative. When operating over 4 pairs, Alternative A assumes the role of Secondary Alternative."

Cl **145** *SC* **145.2.5.7** *P* **129** *L* **31** # 261

Yseboodt, Lennart Philips

Comment Type **T** *Comment Status* **D** *PSE SD*

See: http://www.ieee802.org/3/bt/public/mar17/yseboodt_09_0317_startdetectfix.pdf

This was a late submission in March, which was presented.
We did forget to adopt it, as such it didn`t make into the draft.

SuggestedRemedy

Adopt http://www.ieee802.org/3/bt/public/mar17/yseboodt_09_0317_startdetectfix.pdf

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD YD
The yseboodt_09 makes sense however not clear to me if this baseline was not adopted, how it is accepted without TFTD?.

Cl **145** *SC* **145.2.5.7** *P* **132** *L* **16** # 42

Darshan, Yair Mirosemi

Comment Type **ER** *Comment Status* **D** *Pres: Darshan4*

Editor to scan all state machines (PSE, PD, DLL) and whenever we have "variable<operator>X" e.g. "pd_class_sig=4" add parantesis e.g. "(pd_class_sig=4)".

SuggestedRemedy

Adopt request in the comment

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This is the rule that we have been using. If you have a specific instance of where we have missed it, please submit a specific comment.

TFTD YD
See darshan_06_0517.pdf for comment #42 with specific details.

TFTD HS
I agree with Yair. There are 2 examples on this page alone of the proposed usage, thus the rule argument is weakened.

Proposed accept.

Response DNA: We need to get away from comments that ask Lennart to scan the entire document and fix stuff for us. If you see problems, submit specific comments.

TFTD DS
There are so many examples in the state diagram, it would be impractical to list them all. Give editor license to narrow it down, and let TF make specific comments on the remainder.

Cl **145** *SC* **145.2.5.7** *P* **132** *L* **33** # 43

Darshan, Yair Mirosemi

Comment Type **TR** *Comment Status* **X** *Pres: Darshan10*

TODO #115 D2.3. Comment: On January 2017 meeting we agree that in yseboodt_0117.pdf page 3 we will use optional variables to allow 2 fingers and 3 fingers (Option 1 and 2) and update the state machine accordingly to add to PSE flexibility. Response: Add TODO (Yair): Create proposal for option to allow 2 or 3 class fingers if pse available power = 4.

SuggestedRemedy

Adopt darshan_10_0517.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.2.5.7** *P* **132** *L* **43** # 262

Yseboodt, Lennart — Philips

Comment Type **TR** *Comment Status* **D** *PSE SD*

State 'CLASS_EV3' to 'MARK_EV3' transition incorrectly implemented from baseline. Parens are in the wrong place.

SuggestedRemedy

Change to:
tcle3_timer_done *
(pse_alternative = both) *
(pd_class_sig != 4) *
((pse_avail_pwr >= pd_class_sig + 5) +
(pse_avail_pwr > 5))

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD HS
Change is ok but this calls attention to the incorrect assignment operator in MARK_EV3.

Also change = to <= in MARK_EV3.

Cl **145** *SC* **145.2.5.7** *P* **133** *L* **34** # 164

Stover, David — Analog Devices

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

"pse_allocated_pwr" assignment is split over 2 lines in state MARK_EV_LAST.

SuggestedRemedy

Extend width of state box to fit assignment on a single line.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD LY
This will look ugly (huge statebox, mostly empty).

Cl **145** *SC* **145.2.5.7** *P* **135** *L* **42** # 165

Stover, David — Analog Devices

Comment Type **TR** *Comment Status* **X** *PSE SD*

Change against D2.3 removed clearing of "pd_autoclass" from "IDLE_ACS". Now, Figure 145-14 is broken such that DLL-based Autoclass requests will never be serviced (IDLE_ACS to MEASURE_ACS is gated by "!pd_autoclass").

SuggestedRemedy

Replace transition logic from IDLE_ACS to MEASURE_ACS with "MirroredPDAutoclassRequest".

Proposed Response *Response Status* **W**

TFTD

Cl **145** *SC* **145.2.5.7** *P* **138** *L* **17** # 44

Darshan, Yair — Mirosemi

Comment Type **TR** *Comment Status* **X** *Pres: Darshan11*

TODO #253 D2.3 PSE Class SD for dual-signature PDs is inconsistent with recent developments in single-signature Class SD. Particularly, state CLASS_4PID4 is inconsistent with the notion that pd_req_pwr and therefore pd_cls_4pid are known after 3 (not 4) class events. Also, the "pse_allocated_pwr" paradigm is not implemented for PSE dual-signature Class SD.

SuggestedRemedy

Adopt darshan_11_0517.pdf if ready.
If not ready, keep in TODO.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.2.7** *P* **150** *L* **21** # 36

Beia, Christian ST Microelectronics

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

PDs assigned Class is not defined
Table 145-24 refers to PDs requested Class

SuggestedRemedy

Change
"PClass_PD is the maximum power at the PD PI per the PDs assigned Class, as defined in Table 145–24)"
To:
"PClass_PD is the maximum power at the PD PI per the PDs requested Class, as defined in
Table 145–24)"

Proposed Response *Response Status* **W**

TFTD

Christian is right that the table referenced doesn't mention assigned class. However, the PSE needs to calculate Pclass based on the Pclass_PD of the assigned class of the PD.

See 37

Cl **145** *SC* **145.2.7** *P* **150** *L* **37** # 37

Beia, Christian ST Microelectronics

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

PDs assigned Class is not defined
Table 145-25 refers to PDs requested Class

SuggestedRemedy

Change:
"PClass_PD-2P is the maximum power at the PD PI for a pairset per the PDs assigned Class, as
defined in Table 145–25"
To:
"PClass_PD-2P is the maximum power at the PD PI for a pairset per the PDs requested Class, as
defined in Table 145–25"

Proposed Response *Response Status* **W**

TFTD

Christian is right that the table referenced doesn't mention assigned class. However, the PSE needs to calculate Pclass based on the Pclass_PD of the assigned class of the PD.

See 36

Cl **145** *SC* **145.2.7** *P* **151** *L* **15** # 45

Darshan, Yair Mirosemi

Comment Type **TR** *Comment Status* **X** *Pres: Darshan3*

There are significant differences between the fixed values of the power per class in Table 145-11 to the calculated Pclass per equation 145-2. See for example class 4. Pclass in the table is 30W and the calculated value is 27.37W.

SuggestedRemedy

Adopt darshan_03_0517.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.2.7** *P* **151** *L* **45** # 46

Darshan, Yair — Mirosemi

Comment Type **TR** *Comment Status* **X** *PSE Power*

In the text "After a successful DLL classification, the assigned Class changes depending on the value of the PSEAllocatedPowerValue variable, as defined in Table 145–12. The PSEAllocated-PowerValue values correspond with the maximum power a PD may draw, PClass_PD; see Table 145–24 and 145.5.3.3.5.", missing PSEAllocatedPowerValue_alt(X).

SuggestedRemedy

Change text to:
"After a successful DLL classification, the assigned Class changes depending on the value of the PSEAllocatedPowerValue variable when single-signature PD is supported and PSEAllocatedPowerValue_alt(X) when dual-signature PD is supported, as defined in Table 145–12. The PSEAllocatedPowerValue and PSEAllocated-PowerValue values correspond with the maximum power a PD may draw, PClass_PD and PClass_PD-2P respectively; see Table 145–24 and 145.5.3.3.5."

Proposed Response *Response Status* **W**

technically, OoS

TFTD

TFTD LY
Proposed remedy, change quoted text to:
"After a successful DLL classification, the assigned Class changes depending on the value of the PSEAllocatedPowerValue or PSEAllocatedPowerValue_alt(X) variable, as defined in Table 145–12. The PSEAllocatedPowerValue or PSEAllocatedPowerValue_alt(X) values correspond with the maximum power a PD
may draw, Pclass_PD or Pclass_PD-2P; see Table 145–24 and 145.5.3.3.5."

TFTD CJ
yes, this is out of scope – but it is also broken and that is a result of us finally getting to DS PDs last draft. Yair caught a technical error that needs fixed. Unfortunately, his remedy contains an error and uses 'PD is supported' which we stopped using a while back:
Suggested remedy: AIP:
"After a successful DLL classification, the assigned Class changes depending on the value of the PSEAllocatedPowerValue variable for single-signature PDs and PSEAllocatedPowerValue_alt(X) for dual-signature PDs, as defined in Table 145–12. The PSEAllocatedPowerValue and PSEAllocatedPowerValue_alt(X) values correspond with the maximum power a PD may draw, PClass_PD and PClass_PD-2P respectively; see Table 145–24 and 145.5.3.3.5."

Cl **145** *SC* **145.2.7.1** *P* **152** *L* **44** # 138

Schindler, Fred — Seen Simply, Cisco, T

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

The construct of using a bulleted "— shall" for setting requirements is only used in clause 145 (IEEE 802.3-2015 was scanned to confirm this). The approach taken in clause 145 is also not used consistently. For example, on page 152, line 43,

"Type 3 PSEs
— shall provide a maximum of four class events and four mark events for single-signature PDs.
— shall provide a maximum of three class events and three mark events on each pairset for dual-signature PDs."

Where does the sentence start? I see a period after "PDs." but the next bullet is not capitalized.

The construct changes within the Clause. For example, on page 205, line 30,
"The PSE PI shall withstand without damage the application of short circuits of any conductor to any other conductor within the cable for an indefinite period of time. The magnitude of the current through such a short circuit:
— shall not exceed IPSEUT-Type3-2P, as defined in Equation (145–19), for Type 3 PSEs
— shall not exceed IPSEUT-Type4-2P, as defined in Equation (145–20), for Type 4 PSEs"

Note that this list starts using a colon, and does not have a period. Style guides (Diana Hacker) indicate, "A colon must be preceded by a full independent clause."

The IEEE style guide for 2014, indicates the following when using a list,
"… Closing punctuation should be omitted or phrases. Punctuation should be used for sentences. Lists shall be preceded by an introductory sentence explaining the relevance of the list. …" This guide also includes the following example,

"The following is an example of a properly formatted dashed list:
-- Begin with a capital letter.
-- Include final punctuation for all items in the list if one items in the list is a complete sentence.
-- If at least one of the items in the dashed list is a complete sentence then add ending punctuation to all of the items in the list."

p152 L44 4x shall
p170 L19 11x shall, and bulleted mays
p 171 L1 2x shall, 1x may
p 205 L34 2x shall

SuggestedRemedy

This was briefly discussed with our esteemed Editor to help craft a solution. The Task Force should also get the advice of senior IEEE contributors to craft a final solution for D3.x. A TODO should be assigned for the changes required and this comment shall remain open, to help stimulate the improvements, until the IEEE 802.3 main Editor has

provide direction and it has been implemented.

The preferred choice is to restore text and move away from bullets.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Editor to consult experts and style guide and format lists appropriately.

TFTD LY
Apply Chicago Manual of Style 6.124 which says:
A vertical list is best introduced by a complete grammatical sentence, followed by a colon (but see 6.125). Items carry no closing punctuation unless they consist of complete sentences.
- The quoted text of this comment is OK.
- p152 L44, add colon, remove punctuation
- p170 L19, remove punctuation
- p205 L34, OK, no change

Cl **145** *SC* **145.2.7.1** *P* **152** *L* **53** # 90

Johnson, Peter Sifos Technologies

Comment Type **T** *Comment Status* **D** *PSE Class*

The sentence, "PSEs that require more class events for mutual identification, or to discover the PD requested Class, than the available power allows may issue a class reset event after performing mutual identification or classification.", uses an undefined phrase "class reset event" and also would be better placed as the 2nd sentence after Table 145-13 because the sentence preceding it would then describe the core issue of not furnishing more events than the Class they support.

SuggestedRemedy

Move sentence to line 23 of page 153. Re-phrase as "PSEs that must issue more class events that the class they are capable of supporting in order to determine the PD class may (shall?) utilize the CLASS_RESET state to reset mutual identification at the PD."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Move sentence to line 23 of page 153. Re-phrase as "PSEs that must issue more class events that the class they are capable of supporting in order to determine the PD class may utilize CLASS_RESET to reset mutual identification at the PD."

TFTD, not crazy about wording. The move is a good suggestion.

TFTD LY
Move is good. Do not use 'must'!
Also, 'may utilize' is wrong. IF the PSE overpromises power, it SHALL use CLASS_RESET as dictated by the state diagram. It is however redundant to turn this into a shall.
Remedy:
"PSEs that issue more class events that the class they are capable of supporting in order to determine the PD requested Class then proceed to CLASS_RESET to reset the PD's class event count."

TFTD CJ
error in the remedy: PSEs that must issue more class events that the class... Change to: PSEs that must issue more class events THAN the class…

Cl **145** *SC* **145.2.7.1** *P* **154** *L* **3** # 208

Thompson, Geoff — GraCaSI S.A.

Comment Type **ER** *Comment Status* **D** *Channel*

Current text in P802.3bt/D2.4: NOTE—In a properly operating system, the port may or may not discharge to the VMark range due to the combination of channel and PD capacitance and PD current loading.

SuggestedRemedy

Proposed text for P802.3bt/D2.5: NOTE—In a properly operating system, the port may or may not discharge to the VMark range due to the combination of the overall channel and PD capacitance and PD current loading.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD LY
Why is the use of the word channel OK here ? Shouldn't this also be link section ?

Cl **145** *SC* **145.2.7.1** *P* **154** *L* **20** # 91

Johnson, Peter — Sifos Technologies

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

The following sentence is a bit awkward and imprecise and could be improved. "A PSE connected to a dual-signature PD, implementing 4PID based on classification and enabled for only one class event, shall issue an initial three classification events to determine the Type of the connected PD, then transition to either the CLASS_RESET_PRI or CLASS_RESET_SEC."

SuggestedRemedy

Replace with: "A PSE restricted to Class 3 power on a pairset that uses multi-event classification to determine Dual Signature PD Type, shall transition to the CLASS_RESET state corresponding to that pairset if Dual Signature PD requires more than Class 3 power on that pairset." This should cover Type-2 through Type-4 PD cases in the state machine.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Replace with: "A PSE restricted to Class 3 power on a pairset that uses multi-event classification to determine Dual Signature PD Type, shall transition to the class reset state corresponding to that pairset if Dual Signature PD requires more than Class 3 power on that pairset."

TFTD, again not crazy about wording.

TFTD LY
Less bad:
"A PSE restricted to Class 3 power or less on a pairset that uses Multiple-Event Physical Layer classification to determine a dual-signature PD's Type, shall transition to the class reset state corresponding to that pairset if the PD requires more than Class 3 power on that pairset."

TFTD CJ
yes the wording is awkward. The remedy doesn't make it better.
A PSE implementing 4PID based on classification and enabled for only one class event, when connected to a dual-signature PD, shall issue an initial three classification events to determine the Type of the connected PD, then transition to either the CLASS_RESET_PRI or CLASS_RESET_SEC.

Cl **145** *SC* **145.2.7.2** *P* **155** *L* **13** # 209

Thompson, Geoff GraCaSI S.A.

Comment Type **ER** *Comment Status* **D** *Channel*

Current text in P802.3bt/D2.4: ...allocate enough power to cope with increases in channel resistance due to temperature increase.

SuggestedRemedy

Proposed text for P802.3bt/D2.5: ...allocate enough power to cope with increases in the overall channel resistance due to temperature increase.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD LY
Why is the use of the word channel OK here ? Shouldn't this also be link section ?

TFTD FS
I do not see how adding “the overall” changes things and would like to understand this intent and need before accepting this change.

Cl **145** *SC* **145.2.8** *P* **156** *L* **25** # 47

Darshan, Yair Mirosemi

Comment Type **TR** *Comment Status* **X** *Pres: Darshan13*

The use of Icon-2P_unbalance in Table 145-16 can be improved. See darshan_13_0517pdf.

SuggestedRemedy

Adopt darshan_13_0517.pdf if ready. If not ready, add to TO DO list

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.2.8** *P* **156** *L* **27** # 48

Darshan, Yair Mirosemi

Comment Type **TR** *Comment Status* **X** *Pres: Darshan7*

TODO #129, #152 D2.3 To verify after all unbalance numbers are stable that Icon-2P_unb, Ipeak_2P_unb and ILIM-2P are sync with Table 145-17 (Rload_min and Rload_max table) with resistance of +/-1% accuracy.

SuggestedRemedy

Adopt darshan_07_0517.pdf if ready. If not ready, addto TO DO list.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.2.8.3** *P* **159** *L* **24** # 126

Picard, Jean — Texas Instruments

Comment Type **TR** *Comment Status* **D** *Transients*

The following sentence does not make sense. In reality the PSE cannot really short the PI voltage, all it can do is temporarily turn off its port (it's only a low side switch after all, with a 0.1uF cap).

"The minimum PD input capacitance CPort min or CPort-2P min defined in Table 145–28, allows a PD to operate for input voltage transients which cause VPD to drop as low as 0 V, lasting less than 30 µs as specified in 145.3.8.6."

SuggestedRemedy

Use similar wording to the "at" standard, removing "which cause VPD to drop as low as 0 V".
The wording becomes this:

"The minimum PD input capacitance CPort min or CPort-2P min defined in Table 145–28, allows a PD to operate for input voltage transients lasting less than 30 µs as specified in 145.3.8.6"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD FS
This change removes specific information important to system designers. I believe the change made from .3at text was done by Christian to make the text more correct. I do not want to accept the proposed change.

TFTD CJ
also, Out of scope.

TFTD YD
This change was made by Christian for a reason. The objective was to prevent PD input voltage to change polarity. That is why the text limits the transient at the PD input to zero voltage so it will not be open for interpretation. In addition the voltage may go to zero as a result of transient. It is preventing a case where any external voltage to the PD may change polarity and cause issues to active bridges. Real PSEs connected to the PD will have voltage from 0V to 57V. When PD is tested for compliance, it is not sure that the voltage source that feed it behaves normally, as a result the current text prevents it and we should keep it as is.

TFTD DS
This is informative text, describing a PD behavior (yet we're in the PSE section). It likely does not belong here. It also does not break the standard for this text to be here, and so the proposed remedy is not required.
To the commenter's original concern: The text in question informs the reader of a measurable (at PD PI) phenomenon that could definitely occur, for example, during a positive common-mode surge event. Propose we either a) do not modify this text at all, or, b) strike this block of informative text, entirely.

Cl **145** *SC* **145.2.8.4** *P* **159** *L* **28** # 105

Jones, Chad — Cisco

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

I received this email on 4/20/17: Please review the text for any explicit or implicit guarantees made within the document, especially those that are safety-related. Avoid making guarantees if there is a possibility of unforeseen situations or circumstances altering an outcome. For example, words such as "ensure," "guarantee," "maximize," minimize," etc., should be modified, if they are inaccurate. Substitutions might include "reduce" or "improve." For example, "to ensure safety" might be changed to "to improve safety" or "to prevent" might be changed to "to reduce.".
The next several comments will be the result of my search of the document for these terms. I will preface these comments with #ABSOLUTE.
the text: "should be limited to rare circumstances such as those involving switchover of backup power supplies to ensure system robustness"

SuggestedRemedy

change to: "should be limited to rare circumstances such as those involving switchover of backup
power supplies to improve system robustness"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD LY
We do not need to explain why such a switchover is implemented at all:
"should be limited to rare circumstances such as those involving switchover of backup power supplies or those involving…"

Cl **145** *SC* **145.2.8.5** *P* **161** *L* **44** # 49

Darshan, Yair — Mirosemi

Comment Type **TR** *Comment Status* **X** *Pres: Darshan7*

To verify that Ipeak-2P_unb max value is in sync with (ILIM-2P-2mA).

SuggestedRemedy

Addopt darshan_07_0517.pdf if ready. If not ready, add to TO DO list.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.2.8.5.1** *P* **162** *L* **15** # 50

Darshan, Yair Mirosemi

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

There is an issue raised by Fred regarding the use of the word "ensures" in two locations:
1. The existing text, p162 L15
"The PSE PI pair-to-pair effective resistance unbalance determined by RPSE_max and RPSE_min ensures that along with any other parts of the system, i.e. channel (cables and connectors) and the PD, the pairset with the highest current including unbalance does not exceed ICon-2P-unb as defined in Table 145–16 during normal operating conditions."

2. The existing text, p201 L39,
"RPD_min, RPD_max ensures that along with any other parts of the system, i.e., channel (cables and connectors) and the PSE, the maximum pair current including unbalance does not exceed ICon-2P-unb as defined in Table 145–16 during normal operating conditions. See Annex 145A."

Based on the information I got from David Law:
There is an issue based on 'ensure' being a possible explicit or implicit guarantee. This is addressed in subclause 10.2.5 '"Absolute" verbiage' of the IEEE-SA Standards Style Manual
<https://development.standards.ieee.org/myproject/Public/mytools/draft/styleman.pdf>
which reads as follows.

10.2.5 "Absolute" verbiage
Avoid making guarantees if there is a possibility of unforeseen situations or circumstances altering an outcome. Review the text for any explicit or implicit guarantees made within the document, especially those that are safety-related.
For example, words such as "ensure," "guarantee," "always," etc., should be modified if they are inaccurate. Substitutions might include "maximize" or "minimize" or "often."

Now Analyzing this info:
Base on the above:
1. This is not a safety requirements ===> no issues to use “ensure”.
2. The statement that use “ensures” is accurate under the conditions of the statement itself if they are defined accurately. To achieve the accuracy, see proposed changes.

SuggestedRemedy

Option 1:
1. Modify the existing text in p162 L15 to:
“The PSE PI pair-to-pair effective resistance unbalance determined by RPSE_max and RPSE_min ensures that along with any other parts of the system, i.e., channel (cables and connectors that meets Rch_unb_min and Rch_unb_max requirements per Table 145-17) and the PD (that meet 145.3.8.10 requirements), the pairset with the highest current including unbalance does not exceed ICon-2P-unb as defined in Table 145–16 during normal operating conditions.”
2.Modify the existing text in p201 L39:
“The PD PI pair-to-pair effective resistance unbalance determined by RPD_min and RPD_max ensures that along with any other parts of the system, i.e., channel (cables and connectors that meet Rch_unb_min and Rch_unb_max requirements per Table 145-17) and the PSE (that meets 145.2.8.5.1 requirements), the maximum pair current including unbalance does not exceed ICon-2P-unb as defined in Table 145–16 during normal operating conditions. See Annex 145A.”

Option 2:
1.Modify the existing text in p162 L15:
“The PSE PI pair-to-pair effective resistance unbalance determined by RPSE_max and RPSE_min, in conjunction with other parts of the system, i.e., channel (cables and connectors that meets Rch_unb_min and Rch_unb_max requirements per Table 145-17) and the PD (that meets 145.3.8.10 requirements), are intended to limit the current on the pairset with the highest current including unbalance, does not exceed ICon-2P-unb as defined in Table 145–16 during normal operating conditions.”
2. Modify the existing text in p201 L39:
“The PD PI pair-to-pair effective resistance unbalance determined by RPD_min, and RPD_max in conjunction with any other parts of the system, i.e., channel (cables and connectors that meet Rch_unb_min and Rch_unb_max requirements per Table 145-17) and the PSE (that meets 145.2.8.5.1 requirements), are intended to limit the current on pairset with the highest current including unbalance, does not exceed ICon-2P-unb as defined in Table 145–16 during normal operating conditions. See Annex 145A.”

Proposed Response *Response Status* **W**

TFTD

Option 1 still has the word ensures in it. Option 2 sentences do not make sense.

See 106, 139

Cl **145** *SC* **145.2.8.5.1** *P* **162** *L* **15** # 106

Jones, Chad Cisco

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

#ABSOLUTE
The PSE PI pair-to-pair effective resistance unbalance determined by RPSE_max and RPSE_min ensures that along with any other parts of the system, i.e., channel (cables and connectors) and the PD, the pairset with the highest current including unbalance does not exceed ICon-2P-unb as defined in Table 145–16 during normal operating conditions.

SuggestedRemedy

change to: The PSE PI pair-to-pair effective resistance unbalance determined by RPSE_max and RPSE_min, along with any other parts of the system, i.e., channel (cables and connectors) and the PD, bounds the current such that the pairset with the highest current including unbalance does not exceed ICon-2P-unb as defined in Table 145–16 during normal operating conditions.

Proposed Response *Response Status* **W**

TFTD

See 50, 139

Cl **145** *SC* **145.2.8.5.1** *P* **162** *L* **15** # 139

Schindler, Fred — Seen Simply, Cisco, T

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

Two sentences in this draft use “ensures”, which will be altered by IEEE editorial staff to remove the word ensures (p162 L15 and p201 L29). A solution is proposed so that the Task Force can amend or adopted to get the text they prefer. A related comment was made in D2.3 #202 but was not fixed in the adopted darshan_01_0317Rev008.pdf.

The existing text, p162 L15
“The PSE PI pair-to-pair effective resistance unbalance determined by RPSE_max and RPSE_min ensures that along with any other parts of the system, i.e. channel (cables and connectors) and the PD, the pairset with the highest current including unbalance does not exceed ICon-2P-unb as defined in Table 145–16 during normal operating conditions.”

The existing text, p201 L29,
“RPD_min, RPD_max ensures that along with any other parts of the system, i.e., channel (cables and connectors) and the PSE, the maximum pair current including unbalance does not exceed ICon-2P-unb as defined in Table 145–16 during normal operating conditions. See Annex 145A.”

SuggestedRemedy

Replace the called out text p162 with,
“The PSE PI pair-to-pair effective resistance unbalance determined by RPSE_max and RPSE_min, in conjunction with other parts of the system, i.e., channel (cables and connectors that meet Rch_unb_min and Rch_unb_max requirements per Table 145-17) and a PD that meets 145.3.8.10 requirements, limit the current on the pairset with the highest current including unbalance, and does not exceed ICon-2P-unb as defined in Table 145–16 during normal operating conditions.”

Replace the called out text p201 with,
“The PD PI pair-to-pair effective resistance unbalance determined by RPD_min, and RPD_max in conjunction with other parts of the system, i.e., channel (cables and connectors that meet Rch_unb_min and Rch_unb_max requirements per Table 145-17) and a PSE that meets 145.2.8.5.1 requirements, limit the current on the pairset with the highest current including unbalance, and does not exceed ICon-2P-unb as defined in Table 145–16 during normal operating conditions. See Annex 145A.”

Proposed Response *Response Status* **W**

TFTD

See 106, 50

Cl **145** *SC* **145.2.8.5.1** *P* **162** *L* **16** # 191

Thompson, Geoff — GraCaSI S.A.

Comment Type **ER** *Comment Status* **D** *Channel*

Current text in P802.3bt/D2.4: ...along with any other parts of the system, i.e., channel (cables and connectors) and the PD,

SuggestedRemedy

Proposed text for P802.3bt/D2.5: ...along with the other parts of the system, i.e., the cabling and the PD,

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD DS
"i.e., the cabling..." -- Per #116 (EZ bucket comment), are we calling these "cords" now?

Cl **145** *SC* **145.2.8.5.1** *P* **162** *L* **31** # 30

Anslow, Pete — Ciena

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

Four trailing zeros in Equation 145-15.
Four trailing zeros in Equation 145-18.

SuggestedRemedy

Delete them

Proposed Response *Response Status* **W**

TFTD

Yair, Lennart, what was our conclusion here?

TFTD LY
We agreed to remove trailing zeroes everywhere, but we use as many significant digits as needed (eg. More than 3).
Remedy is OK.

TFTD YD
Currently I need the accuracy of 0.040 and 0.030 in Equation 145-15. So in order to keep it, I suggest to change the numbers to 0.041 and 0.031. In Equation 145-18 we can remove the trailing zeros.

Cl **145** *SC* **145.2.8.5.1** *P* **162** *L* **48** # 51

Darshan, Yair Mirosemi

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

In the text below:
"A PSE shall not source more than ICon-2P-unb min on any pair when connected to a **load** as shown in Figure
145–22, using values of Rload_min and Rload_max as specified in Equation (145–16) and Equation (145–17).", It is not clear that the "load" is the PSE load

SuggestedRemedy

Change text to "A PSE shall not source more than ICon-2P-unb min on any pair when connected to the **PSE load** as shown in Figure 145–22, using values of Rload_min and Rload_max as specified in Equation (145–16) and Equation (145–17)."

Proposed Response *Response Status* **W**

TFTD

What is a "PSE load?"

Technically, OoS.

TFTD CJ
Reject
1. This is out of scope.
2. 145-22 clearly labels what part is the PSE. If the reader is paying attention, they know the load starts at the PSE PI, which is also clearly labeled. Therefore, there is nothing techincally wrong.
Result: reject for being out of scope.

TFTD YD
TFDT: "What is PSE load?", it is explained by Figure 145-22 in comment #54.

Cl **145** *SC* **145.2.8.5.1** *P* **163** *L* **6** # 52

Darshan, Yair Mirosemi

Comment Type **TR** *Comment Status* **X** *Pres: Darshan8*

TODO #129 #152 D2.3 Table 145-17 contain resistance values of actual test verification model. This values may need to be rounded to 1% in order that Icon-2P_unb will be kept with accuracy of +/-5mA/TBD.

SuggestedRemedy

Adopt darshan_08_0517.pdf if ready. If not ready, addto TO DO list.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.2.8.5.1** *P* **163** *L* **38** # 266

Wendt, Matthias Philips Lighting

Comment Type **TR** *Comment Status* **D** *Unbalance*

original text: "Rload_min = RPair_PD_min + RChunb_min"
in equation 145-16 and 145-17 RPair_PD_min/max is used but Table 145-17 lists RPD_min/max.

SuggestedRemedy

Change to: Rload_min = RPD_min + RChunb_min, and same fix for Eq. 145-17
Also, there is a missing where subclause below the equation. Add it.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Rpd is fixed by comment 53.

Add "where…" statement below equations as appropriate.

TFTD YD
"The response is not clear. There are two errors. (a) Rpair_PD_min/max need to be Rpd_min/max. (b) Rchunb_min/max need to be Rch_unb_min/max. See complete remedy in comment #53 that you have accepted. OBE comment #62 to comment #53."

TFTD YD
"(1) Rpd is fixed in comment #53(2) Adding the ""where"" is OK but not specific. Add :""Where the fixed worst-case values of Rpd_min, Rpd_max, RCh_unb_min and RCh_unb_max are defined in Table 145-17"""

Cl **145** *SC* **145.2.8.5.1** *P* **163** *L* **45** # 198

Thompson, Geoff GraCaSI S.A.

Comment Type **ER** *Comment Status* **X** *Pres: Darshan12*

Current text in P802.3bt/D2.4: ICon-2P-unb and Equation (145–15) are specified for total channel common mode pair resistance RChan-2P from 0.2 Ω to 12.5 Ω and worst case unbalance contribution by a PD. (I don't understand what “total channel common mode pair resistance” is in this context. What are the measurement end points for this “total channel” and what is the relevance to the specification at hand? We have no control of “total channel common mode pair resistance” other than by the independent specification of each of the 3 elements, PSE, Link Section and PD. Derivations of how we came to the values of each have no place in the specifications of each of the two separate devices.)

SuggestedRemedy

Proposed text for P802.3bt/D2.5: If we are to include these derivations they should be in an informative annex.

Proposed Response *Response Status* **W**

TFTD

TFTD YD
TFDT: See darshan_12_0517.pdf

Cl **145** *SC* **145.2.8.5.1** *P* **163** *L* **46** # 95

Johnson, Peter Sifos Technologies

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

This paragraph (starting with "ICon-2P-unb and Equation (145–15) are specified for…") needs some help. It is not very clear and is grammatically flawed.

SuggestedRemedy

Replace with: "The values for Icon_2p_unb and the relationship between RPSE-max and RPSE_min (Equation 145-15) are valid given that Rchan-2P ranges from 0.2 ohms to 12.5 ohms and that the PD meets requirements of 145.3.8.10. In cases where Rchan-2P is less than 0.2 ohms or Rchan is less than 0.1 ohm, PSE compliance with Icon-2P-unb can be evaluated using Rload_min and Rload_max both reduced by 0.5 X Rchan-2P. This compliance will require a reduction in the ratio of RPSE_max to RPSE_min presented by Equation 145-15.

Proposed Response *Response Status* **W**

TFTD

Technically, OoS.

Yair and Pete, please work together.

Also, see 198.

TFTD CJ
NOPE. This is clearly out of scope. Most of this unbalance section isn’t very clear, so that’s not a techincal reason. The only change I would support for this out of scope comment is fixing the grammar of the second sentence by adding ‘For’ at the beginning: “For PSEs that support channel common mode resistance less than 0.2 Ω, or if RChan is less than 0.1 Ω, the PSE should meet…”

TFTD YD
TFDT: See darshan_12_0517.pdf

Cl **145** *SC* **145.2.8.5.1** *P* **164** *L* **4** # 54

Darshan, Yair Mirosemi

Comment Type **T** *Comment Status* **X** *Pres: Darshan9*

Update Figure 145-22 per darshan_09_0517.pdf

SuggestedRemedy

Adopt darshan_09_0517.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.2.8.5.1** *P* **164** *L* **10** # 200

Thompson, Geoff GraCaSI S.A.

Comment Type **ER** *Comment Status* **X** *Pres: Darshan12*

Current text in P802.3bt/D2.4: The box on the far right in the figure is undefined. Is it a PD? Is it a PD minus some of its resistance? Is it a PD minus all of its resistence? Is it something else? A test device perhaps. Where is it defined?

SuggestedRemedy

Proposed text for P802.3bt/D2.5: ????

Proposed Response *Response Status* **W**

TFTD

TFTD YD
TFDT: See darshan_12_0517.pdf

Cl **145** *SC* **145.2.8.5.1** *P* **164** *L* **17** # 201

Thompson, Geoff GraCaSI S.A.

Comment Type **ER** *Comment Status* **X** *Pres: Darshan12*

Current text in P802.3bt/D2.4: “End-to-end pair-to-pair resistance” The “ends” as used in this evaluation are not defined, not defined as being accessible and under normal circumstances don't even come from the same vendor. Therefore I don't have a clue how to do this “evaluation”

SuggestedRemedy

Proposed text for P802.3bt/D2.5: ????

Proposed Response *Response Status* **W**

TFTD

TFTD YD
TFDT: See darshan_12_0517.pdf

Cl **145** *SC* **145.2.8.5.1** *P* **164** *L* **20** # 55

Darshan, Yair Mirosemi

Comment Type **T** *Comment Status* **X** *Pres: Darshan9*

TODO#370 D2.3.
Comment: Figure 145-22 is titled "PSE PI unbalance specification and E2EP2PRunb" to replace the abbreviation with "PSE PI unbalance specification and system resistance unbalance". Also remove the two occurences of this abbreviation in Annex 145A and replace by remedy text.
Respose: check correct usage of these terms and provide new definition(s)

SuggestedRemedy

Adopt darshan_09_0517.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.2.8.5.1** *P* **164** *L* **24** # 267

Wendt, Matthias Philips Lighting

Comment Type **TR** *Comment Status* **D** *Unbalance*

original text: "a) Use Rload_min and Rload_max from Table 145-17 for low channel resistance conditions."
evaluation note referees in a) to Table 145-17 where as there only the requirements for the calculation are listed.

SuggestedRemedy

Change to: a) Use Rload_min and Rload_max from equations 145-16 and 145-17 for low channel resistance conditions.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD YD
The fix for (a) is OK. Similar fix is needed to (f) : "Repeat steps b) through e) for Rload_min and Rload_max from equations 145-16 and 145-17 for high channel resistance conditions."

Cl **145** *SC* **145.2.8.6.1** *P* **165** *L* **33** # 96

Johnson, Peter — Sifos Technologies

Comment Type **T** *Comment Status* **X** *PSE Inrush*

There is an inconsistency in the three minimum inrush current requirements a), b), and c) and Table 145-16. Conditions a) and b) specify "minimum Iinrush-2P" requirements with actual values while Table 145-16 is blank for minimum Inrush-2P given Single Signature PD. Are these figures really applicable to Iinrush-2P or are they applicable to Iinrush? Item c) says refer to Table 145-16 for minimum Iinrush-2P, but again, those boxes are blank for Single Signature.

SuggestedRemedy

Resolve if 5mA and 60mA are really applicable to Iinrush or Iinrush-2P. For condition c), replace with "…above 30V, the minimum Iinrush and Dual Signature Iinrush-2P reqiurements are as specified in Table 145-16."

Proposed Response *Response Status* **W**

TFTD

Should we clarify the note in Table 145-16? Maybe with the minimum value only applies above 30V?

Cl **145** *SC* **145.2.8.6.1** *P* **165** *L* **44** # 97

Johnson, Peter — Sifos Technologies

Comment Type **T** *Comment Status* **D** *PSE Inrush*

The first paragraph of 145.2.8.6.1 describes a Type-4 PSE that is allowed to provide minimum Iinrush below what is specified in Table 145-16. It then stipulates "Such a PSE that implements a minimum Iinrush lower than defined in Table 145–16 shall successfully power up a single-signature PD comprised of a parallel combination of 360 µF and a Class 2 load within TInrush-2P min...". This description does not jive with Figure 145-23 that was altered to allow that some PD's start inrush at some time after power is applied. The Tinrush-2P min requirement presumably only works for PD's that draw inrush starting with the power-up.

SuggestedRemedy

I do no know how to resolve this since specifying that a PSE has the full Tinrush-2P min period to power a PD is contrary to the overall inrush specification. PD's must be designed to charge with Iinrush min in a time period Tinrush-2P min less any delay time in the PD's start of inrush. This minimum inrush exception would present an interop risk it seems.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This requirement applies to all PSEs no matter when they start the inrush current. They have a maximum of 75ms to get the cap charged. Note that in Figure 145-23 Tinrush-2P still starts from time 0.

TFTD PJ
However, I'm not sure you properly interpreted what I was saying here. My sole concern is PD's that delay inrush. These are very real and becoming more commonplace.

A PD designer designing a PD that delays inrush is obligated to carefully study PSE inrush requirements along with PD inrush requirements. For example, a Class 8 PD that delays inrush by 20 msec from power-up is only assured of 800mA for 30 msec (Tinrush_min-20msec delay). This is pretty clear from the PSE spec and the Figure 145-23 that now accounts for delayed PD inrush.

However, the "exception" that I am commenting on allows for less than 800mA charging current so long as PSE can power 360uF in combination with Class 2 load in Tinrush_min (50msec) period of time. So what assures that the PD designed to get powered with 800mA for 30msec will also power successfully with this PSE ?

Cl **145** *SC* *P* **166** *L* **24** # 310

Lukacs, Miklos — Silicon Labs

Comment Type **ER** *Comment Status* **X** *PSE Power*

The 8.2ms tick mark on the PSE upperbound template in Figure 145-24 and 145-25 coincides with Tlim_2p_min on the lowerbound template.

SuggestedRemedy

Move away the 8.2ms and Tlim_2p_min tick marks horizontally.

Proposed Response *Response Status* **W**

TFTD

Is anyone else confused by this? The vertical dashed lines do not go all the way across to avoid this exact confusion.

TFTD LY
Moving them apart is tricky: TLIM can be 10ms or 6ms, which falls on either side of 8.2ms. Propose to leave as-is.

TFTD CJ
this is a reject for scope. Yes, it can be confusing.

Cl **145** *SC* **145.3.1** *P* **171** *L* **25** # 154

Stewart, Heath — Analog Devices

Comment Type **ER** *Comment Status* **X** *PD Types*

The notion of construction is odd. We have already created the idea of configuration in the PSE section and can reuse it here.

SuggestedRemedy

Change
PDs can be constructed as single-signature or dual-signature
To
PDs can be of either single-signature construction or dual-signature construction

Proposed Response *Response Status* **W**

TFTD

Heath, did you mean to change construction to configuration?

Cl **145** *SC* **145.3.1** *P* **171** *L* **32** # 269

Yseboodt, Lennart — Philips

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

Table 145-18 uses the header "Single- or dual- signature"

SuggestedRemedy

Replace by "PD signature" which matches subclause title 145.3.5

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Based on the result of comment 154, I think "Signature Configuration" might be better.

TFTD

Cl **145** *SC* **145.3.1** *P* **172** *L* **2** # 270

Yseboodt, Lennart Philips

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

"Single-signature PDs that request Class 3 or less implement Multiple-Event Physical Layer Classification and may implement Data Link Layer classification (see 145.5).

Single-signature PDs that request Class 4 or greater implement both Multiple-Event Physical Layer classification (see 145.3.6.1) and Data Link Layer classification (see 145.5). Such Type 3 PDs request Class 4, 5, or 6, while Type 4 PDs request Class 7 or 8.

Dual-signature PDs implement Multiple-Event Physical Layer classification and Data Link Layer Classification (see 145.5). Type 3 dual-signature PDs request Class 1, 2, 3, or 4 on each pairset, while Type 4 dual-signature PDs request Class 5 on at least one pairset."

The origin of all of this text used to be to describe whether PDs supported Single or Multiple event, and whether they support DLL or not.
ALL of this text is redundant to the Table in the same section, with the exception that that PDs support Multiple Event Physical layer. But that is true for all Types described here, and as such doesn`t need stating here.

SuggestedRemedy

Remove quoted text.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Since Physical layer class is not mentioned in the table…

Replace quoted text with:
"All Type 3 and Type 4 PDs Multiple-Event Physical Layer classification."

TFTD LY
Suggested sentence doesn't make any sense (verb missing). I considered a statement like that, but given that supporting classification is not a distinguishing
feature for Type 3 and Type 4 PDs, such a sentence would be lost there.

Response DNA: you are correct.
Replace quoted text with:
"All Type 3 and Type 4 PDs implement Multiple-Event Physical Layer classification."

TFTD CJ
1: the text is already written and does a good job of clearly stating expected behaviors.
2: there are no shalls so it is informative.
3: only portions of the quoted text changed, therefore some of the comment is out of scope.
4. The suggested remedy is grammtically incorrect. (don't need T3, T4. And what do they do? No verb. PDs implement Multiple…)

I would vote for keeping the text as is and being nice to our readers.

TFTD HS
Remedy no verb.

All Type 3 and Type 4 PDs implement Multiple-Event Physical Layer classification.

TFTD DS
Accidentally a verb: "All Type 3 and Type 4 PDs implement Multiple-Event Physical Layer classification."

Cl **145** *SC* **145.3.2** *P* **172** *L* **16** # 232

Walker, Dylan Cisco

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

"The PD shall be implemented to be insensitive to the polarity of the power supply on either Mode."

This shall shall not contain the word "either" and shall be more specific. More seriously, "either" could be construed as "one or the other", and polarity insensitivity cannot assume any polarity on the other Mode.

SuggestedRemedy

Change:
"The PD shall be implemented to be insensitive to the polarity of the power supply on either Mode."

To:
"The PD shall be implemented to be insensitive to the polarity of the power supply on each mode regardless of the polarity of the power supply on the other mode."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD LY
The original (D2.2 and 802.3at) text: "The PD shall be implemented to be insensitive to the polarity of the power supply."
When not specifically stated otherwise, such a shall applies to the whole PD (PI) in any possible combination.
Now we add clumsy text to arrive back at the same thing.
Remedy: re-instate D2.2 text.

Cl **145** *SC* **145.3.2** *P* **172** *L* **24** # 271

Yseboodt, Lennart Philips

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

"PDs interoperate with Type 1, Type 2, Type 3, and Type 4 PSEs, subject to power limitations. See 145.3.6. The PD may operate in a reduced power mode in that case."

Is typeset in Note style.
Last sentence needs a bit more flesh.

SuggestedRemedy

- Change to regular text.
- Replace last sentence by:
"PDs connected to a PSE that cannot supply the requested amount of power can choose to operate in a reduced power mode."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

- Change to regular text.
- Replace last sentence by:
"PDs connected to a PSE that cannot supply the requested amount of power may choose to operate in a reduced power mode."

TFTD, this sentence is misleading as PDs that get hooked up to a lower power PSE MUST operate at a reduced power mode (whether they just blink an LED or actually do something useful).

TFTD CJ
how about: PDs interoperate with Type 1, Type 2, Type 3, and Type 4 PSEs, subject to power limitations. The PD may operate in a reduced power mode when connected to a PSE of a lower Type or provide active indication. See 145.3.6.

Cl **145** *SC* **145.3.2** *P* **172** *L* **28** # 140

Schindler, Fred Seen Simply, Cisco, T

Comment Type **TR** *Comment Status* **X** *PD PI*

"The PD shall withstand any voltage from 0 V to 57 V applied to Mode A, Mode B, and both simultaneously indefinitely without permanent damage."

This text does not cover PD connections that exist with Type 3 and 4 PSEs. The VPSE voltage for Type 3 and 4 PSEs normally has the negative polarity on the hot-swap switch path and the positive polarity is unswitched. Therefore, PDs will be exposed to the positive polarity on both Modes and will have a negative polarity on one mode when one Mode has been powered on.

SuggestedRemedy

Replace the called-out text with,

"The PD shall withstand any voltage from 0 V to 57 V applied to Mode A, Mode B, both simultaneously, and Mode-A and Mode-B positive pairs and either Mode negative pair, indefinitely without permanent damage."

Proposed Response *Response Status* **W**

TFTD

Cl **145** *SC* **145.3.3.7** *P* **179** *L* **23** # 57

Darshan, Yair Mirosemi

Comment Type **TR** *Comment Status* **D** *PD Class*

in DO_CLASS_EVENT6 state the present_class_sig_B may be FALSE too due to the fact that it is not actual DO_CLASS_EVENT. I understand that during this time we may have class signature or we may not have it so in order to be flexible we can do the following: Cahnge present_class_sig_A and present_class_sig_B to all possible combinations i.e A=FALSE and B=TRUE or A=FALSE and (B=FALSE or TRUE) which results with keeping in the state just present_class_sig_A <==FALSE and remove present_class_sig_B so present_class_sig_B can be FALSE or TRUE.

SuggestedRemedy

Remove "present_class_sig_B<==TRUE" fron the state.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This is specifically done to give the PD a known behavior. If we allow the PD to do whatever we want during extra class pulses we close off the ability to ever extend the classification protocol again (I know, we don't plan on ever doing it, but that doesn't mean we should ignore the possibility).

TFTD YD
I need to think on other way to get what you want.

Cl **145** *SC* **145.3.3.7** *P* **179** *L* **35** # 273

Yseboodt, Lennart Philips

Comment Type **T** *Comment Status* **D** *Editorial*

In state 'POWERED' there is a spelling mistake, dll_enable.

Why does this mistake keep popping up ?
dll_enabled is a control variable, set by the state machine.
But it reads like a status variable.
It actually makes more sense to call it 'dll_enable', this better reflects what it does.

SuggestedRemedy

Global S&R:

pd_dll_enabled => pd_dll_enable
pse_dll_enabled => pse_dll_enable

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD YD
To repeat the fix for dual-signature PD state machine and variables list.

Cl **145** *SC* **145.3.3.7** *P* **179** *L* **40** # 1

Abramson, David Texas Instruments

Comment Type **TR** *Comment Status* **X** *Pres: Abramson1*

The NO_POWER state allows unwanted behavior by the PD.

SuggestedRemedy

Adopt changes in abramson_01_0517.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.3.5** *P* **187** *L* **29** # 274

Yseboodt, Lennart Philips

Comment Type **TR** *Comment Status* **X** *Connection Check*

"A single-signature PD shall present a valid detection signature, as defined in Table 145-20, on a given Mode when no voltage or current is applied to the other Mode, and shall present an invalid detection signature on that Mode when any voltage between 10.1 V and 57 V is applied to the other Mode. These requirements apply to both Mode A and Mode B."

This requirement (which defines what a single-sig PD is) applies only when voltages above 10.1V are applied to the 'corruptor' pairset.
During connection check however, only voltages BELOW 10.1V may be used to corrupt detection.

The lowest possible corruptor voltage that is guaranteed to create an invalid detection signature is 2.7V + 1V = 3.7V.

If we extend the range down to 3.7V, we make the requirement correct.
The way this is written, it specifies a PD to show a valid detection signature. This says the PD would need to pass detection (not connection check) which can't be fooled by the presence of a single corruptor voltage on the other pairset.

SuggestedRemedy

"A single-signature PD shall present a valid detection signature, as defined in Table 145-20, on a given Mode when no voltage or current is applied to the other Mode, and shall present an invalid detection signature on that Mode when any voltage between 3.7 V and 57 V is applied to the other Mode. These requirements apply to both Mode A and Mode B."

Proposed Response *Response Status* **W**

TFTD

Lennart points out a real problem (the requirements for DS don't actually apply to the valid test range), but his solution will not always work (the corrupting voltage needs to be higher than the detection probe voltage).

Cl **145** *SC* **145.3.8** *P* **193** *L* **40** # 59

Darshan, Yair Mirosemi

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

In Table 145-28 Item 8 "Inrush to PD current control delay". This parameter name is not clear.
What is "PD control delay"

SuggestedRemedy

Group to discuss and suggest better definition.

Proposed Response *Response Status* **W**

TFTD as requested

Cl **145** *SC* **145.3.8** *P* **194** *L* **26** # 142

Schindler, Fred — Seen Simply, Cisco, T

Comment Type **TR** *Comment Status* **D** *PD Power*

Under the same operating conditions Single-signature (SS) and Dual-signature (DS) systems should provide the same power levels. On line 12, a class-4 SS provides at least 28.3 W, while on line 26 a class-4 DS provides at least 28.4 W. One line 13, a class-5 SS provides at least 42 W, while on line 27 a class-5 DS provides at least 37.2 W (this is the average power not the peak power). The math works for the SS data.

SuggestedRemedy

Replace the Table item 11 for Class 4, which is “28.4” with “28.3”.

Replace the Table item 11 for Class 5, which is “37.2” with “42”.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

While your suggested remedy is wrong (and this is for PDs, thus we are talking about Peak power drawn (not supplied)), there are some things that need to be fixed. However, the 37.2W entry for class 5 for DS is correct (it is half of the class 8 Peak power for SS).

Changes:
1. Change Type to "3, 4" for classes 1 to 4 in items 10 and 11.
2. Change "28.4" to "28.3" for item 11, class 4.

TFTD FS
This comment needs to be discussed as I may not be the only person that is “wrong.”

A DS class-5 PD demands half the power of a SS class-8 PD.
74.8/2 = 37.4 W, so item-11 of 37.2 W is not correct.

TFTD HS
1) Disagree with Comment Editor on Type changes
Change items 10 classes 5,6 Type to "3"
PDs do not overlap Type like PSEs do.

2) Agree, change "28.4" to "28.3" for item 11, class 4.

Half of 74.8 is 37.4. Perhaps comment editor is using a TI calculator?
Change item 11 Class 5 Max to 37.4

In addition, in the tables items' referenced subclause 145.3.8.4 there is some deeply wrong language...

TFTD a fix

The equations in Table 145–28 are used to approximate the ratiometric peak powers of Class 1 through Class 8. These equations may be used to calculate PPeak_PD or PPeak_PD-2P for Data Link Layer classification by substituting PClass_PD or PClass_PD-2P with PDMaxPowerValue and for Autoclass by substituting PClass_PD with PAutoclass_PD.

Cl **145** *SC* **145.3.8.1** *P* **195** *L* **31** # 279

Yseboodt, Lennart — Philips

Comment Type **TR** *Comment Status* **X** *Pres: Yseboodt2*

"The behavior of a PD is undefined if V PD falls below V Off_PD once a PD has reached the POWER_DELAY or POWERED state, until V PD falls below V Reset_PD."

May be a bit too liberal...

SuggestedRemedy

Adopt yseboodt_02_0517_nopower.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.3.8.2** *P* **195** *L* **46** # 60

Darshan, Yair — Mirosemi

Comment Type **TR** *Comment Status* **D** *Pres: Darshan5*

In the text "PDs may also adjust their maximum required operating power below PClass_PD or PClass_PD-2P by using Autoclass (see 145.3.6.2)." . The Autoclass applies only for single-signature. Delete "or Pclass_PD-2P"

SuggestedRemedy

Change from: "PDs may also adjust their maximum required operating power below PClass_PD or PClass_PD-2P by using Autoclass (see 145.3.6.2)." .
To "PDs may also adjust their maximum required operating power below PClass_PD by using Autoclass (see 145.3.6.2)."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

PDs operating over 2 pairs can still use this feature.

TFTD LY
Remedy is correct. In 2-pair mode we use PClass_PD, not PClass_PD-2P.

TFTD YD
"See darshan_05_0517.pdf. I have addressed the issue that dual-signature PD that operates over 2-pairs can still use the Autoclass feature."

Cl **145** *SC* **145.3.8.4.1** *P* **198** *L* **12** # 281

Yseboodt, Lennart Philips

Comment Type **E** *Comment Status* **X** *PD Power*

"Operating under 145.3.8.4.1 conditions is allowed if P Peak_PD and P Peak_PD-2P requirements are met and the total input power is less than or equal to P Class or P Class-2P at the PSE PI respectively when calculated over a 1 second interval."

Text self-references and this is the second time we repeat that peak power is included in the total 'budget' for input power.
I tried rewriting this, but always get into a corner where I need to use the word 'must'. Clearly indicates this text needs to be a shall, but we already have that.

Also, 'calculated over a 1 second interval' means the calculation takes 1 second. Not what is meant.

SuggestedRemedy

Remove quoted text.

Proposed Response *Response Status* **W**

TFTD, what was this text meant to do in the first place?

TFTD FS
page 195 line 42 has an average power requirement for the PD.

I believe someone replaced a note with the called-out text, which is related to the legacy text,
“NOTE—The duty cycle of the peak current is calculated using any sliding window with a width of 1 s.”

The text is a warning to PD designers that they do not get 5% more power when drawing peak power.

I suggest the following replacement text,
“Note that PD consuming peak power covered in this section still need to meet that PD average power requirements provide in 145.3.8.2.”

TFTD YD
TFTD: This text was added to ensure Irms, and average power when you have peak power events. As a result of this text we agree last meeting to remove all Irms spec. We need to repeat it here too because it is under "exceptions" which is even more sensitive to Irms and losses than the typical case so we need to do it here as well. On the other hand, 145.3.8.4.1 may be covered by 145.3.8.2 page 195 lines 42-44 which says "The maximum average power, PClass_PD or PClass_PD-2P in Table 145–24, Table 145–25, and Table 145–28 or PDMaxPowerValue in 145.5.3.3.5, including any peak power drawn per 145.3.8.4 shall be calculated over a 1 second sliding window.". If we add reference to 145.3.8.4.1 then for sure we are covered. So, I suggest to change 145.3.8.2 page 195 lines 42-44 to "The maximum average power, PClass_PD or PClass_PD-2P in Table 145–24, Table 145–25, and Table 145–28 or PDMaxPowerValue in 145.5.3.3.5, including any peak power drawn per 145.3.8.4 **and 145.3.8.4.1** shall be calculated over a 1 second sliding window." and then we can remove the text which is the subject of this comment. Question: If when referencing 145.3.8.4, it covers 145.3.8.4.1? IF TRUE then we don't need to make this change and still we can remove the called out text.

Cl **145** *SC* **145.3.8.6** *P* **198** *L* **24** # 127

Picard, Jean Texas Instruments

Comment Type **TR** *Comment Status* **D** *PD Power*

"A PD shall continue to operate without interruption in the presence of transients at the PSE PI as defined in 145.2.8.3."

This sentence does not make sense, since it refers to a transient to 0V at the PI. In reality the PSE cannot really short the PI voltage, all it can do is temporarily turn off its port (it’s only a low side switch after all, with a 0.1uF cap).
Also, if the voltage at the PI goes down to 0V or not at PSE PI is purely dependent on the PD configuration (load current, type of input bridge, etc), and should not be part of the requirement.

SuggestedRemedy

Replace with:
"A PD shall continue to operate without interruption while there is loss of power at PSE PI for up to 30 µs"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD LY
"presence of transients" and "loss of power" are very different things.
I have a feeling we need two shalls here.

TFTD FS
The PD is required to interoperate with PSEs that meet the requirements in 145.2.8.3. I do not support the change in the text and do not understand the concern of the commenter.

TFTD CJ
Out of scope. Let’s argue if this is technically broken.

TFTD YD
The argument made is not clear. Where it said the PSE is causing voltage to be shorted?. This comment is related to comment #127 regarding the text in 145.2.8.3 regarding transients that cause voltage at the PD PI not going below zero.

TFTD HS
This is a PD "shall" requirement invoked at the PSE PI.

Cl **145** *SC* **145.3.8.6** *P* **198** *L* **25** # 61

Darshan, Yair — Mirosemi

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

(TODO #209, #91 145.3.8.6 Page 188 lines 20, 23)
(Yair, Fred): Fix PSE section so that PSEs that lower current limit based on class, increase Tlim (or something) in order to deliver needed charge.

Comment #209 D2.3
This comment closes a TODO related to D2.2 #87 and #96 for Ken and Fred.
System operation is dependent on the assigned class.
ILIM exists to provide PSE current to a PD when the PSE voltage increases (see schindler_1_0915).
A Type-4 PSEs provide higher power so they can charge the PD bulk capacitor faster (TLIM is 6ms for Type 4 vs 50ms for Type 2). However, if ILIM-2P is lowered when driving a PD with class < 5 then TLIM needs to increase to ensure the capacitance is charged.

Comment #91 D2.3
The sentence starting with "A single-signature PD includes CPort..." leads into a listing of PD types and Cport values that "Intrinsically meet the requirements in this subclause". This is no longer true, because PDs can be demoted to an assigned class with different TLim and ILim characteristics.

SuggestedRemedy

See Fred's suggested remedy.
If not ready, keep it in TODO

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.3.8.6** *P* **198** *L* **39** # 99

Johnson, Peter — Sifos Technologies

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

The sentence "Table 145–29 defines two PSE transient conditions and PD Types to which these apply" did not keep up with the fact that Table 145-29 no longer has PD Types in it.

SuggestedRemedy

Change to "Table 145–29 defines two PSE output voltage transients and associated channel resistance conditions."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change to "Table 145–29 defines two PSE transient conditions."

We are trying to remove "channel".

TFTD, not crazy about text.

Cl **145** *SC* **145.3.8.6** *P* **199** *L* **24** # 282

Yseboodt, Lennart — Philips

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

In the transient section Figure 145-31 has the Y axis labeled as "Power", but then proceeds to show current levels.
Upon reflection, the information in this Figure is provided in the text (minus a missing requirement).

SuggestedRemedy

Adopt yseboodt_01_0517_transients.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.3.8.7** *P* **200** *L* **13** # 143

Schindler, Fred — Seen Simply, Cisco, T

Comment Type **TR** *Comment Status* **D** *PD Power*

A D2.4 text adjustment changed normative text to a Note,
“NOTE—The worst-case condition is when both PSE and PD generate the maximum noise allowed by Table 145–16 and Table 145–28, which may cause a higher noise level to appear at the PI than the standalone case as specified by this clause.”

, which de-emphasized information that the reader should “pay special attention too”. The wording is also suboptimal.

SuggestedRemedy

Change the note to normative text,

“Note that the worst-case condition occurs when both PSE and PD generate the maximum noise allowed by Table 145–16 and Table 145–28, which may cause a higher noise level to appear at the PI than the standalone case as specified by this clause.”

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The change to a NOTE was made to make it stand out to the reader as a warning. This is not normative text (there is no shall), it is only an informative warning.

TFTD FS
I do not accept this rejection.
The IEEE style guide 2014:
16. “… notes are informative. Notes are explanatory statements used in the text for emphasis or to offer informative suggestions about the technical content of the standard. …

“Note that” is normative and is translated to mean “pay special attention to.” “Note that” is usually part of a paragraph while “NOTE—” is set apart as its own paragraph.”

Cl **145** *SC* **145.3.8.8** *P* **200** *L* **17** # 283

Yseboodt, Lennart — Philips

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

"Following a valid detection and a rising voltage transition from V valid to V Class_PD , the PD Physical Layer class signature shall be valid within T Class_PD as specified in Table 145-28 and remain valid for the duration of the classification period."

The 'classification period' is ill defined. And sure enough, this comes straight out of 802.3af, where there was no mark and this statement made sense.

SuggestedRemedy

"Following a valid detection and a rising voltage transition from V valid or VMark_PD to V Class_PD , the PD Physical Layer class signature shall be valid within T Class_PD as specified in Table 145-28 and remain valid for the duration of the class event."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD DS
V Mark_PD is a range of voltages wholly contained within the range V Valid. Propose do not add "or VMark_PD" per proposed remedy. If we would like to elucidate that the PD may enter this state from detection or from a mark event, we should just say that.

Cl **145** *SC* **145.3.8.10** *P* **201** *L* **8** # 65

Darshan, Yair Mirosemi

Comment Type **TR** *Comment Status* **X** *Pres: Darshan4*

In the text "Single-signature PDs shall not exceed ICon-2P-unb for longer than TCUT-2P min and 5 % duty cycle, and shall not exceed IPeak-2P-unb, as defined in Table 145–16 on any pair when PD PI pairs…", there are few problems that makes the spec broken:
1) IPeak-2P-unb is not defined in Table 145-16. It is defined by Equation 145-12.
2) Equation 145-12 belongs to PSE section and set the actual Ipeak-2P_unb current which is not the maximum Ipeak-2P_unb since it depends on PSE voltage. PDs must be designed to the maximum Ipeak-2P_unb (and also to the maximum Icon-2P_unb) due to the fact that the PD doesn't control the actual Ipeak-2P-unb since it doesn't have the knowledge of PSE voltage and more important, they can be connected to PSE with the minimum voltage which will create the maximum possible current.
As a result of the above arguments we need to define new PD parameters name to Icon-2P_unb and Ipeak-2P_un i.e. Icon_PD-2P_unb and Ipeak_PD-2P_unb with fixed maximum values that are a function of PD parameters only (as we did per the concept we adopt on march for the comment #320 from D2.3 (see yseboodt_08_0315_peakunbalance.pdf arguments) that generated the new Equation #145-28 and 145-29).

SuggestedRemedy

Adopt darshan_04_0517.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.3.8.10** *P* **201** *L* **8** # 144

Schindler, Fred Seen Simply, Cisco, T

Comment Type **ER** *Comment Status* **X** *Pres: Darshan4*

Modified text,

"Single-signature PDs shall not exceed ICon-2P-unb for longer than TCUT-2P min and 5 % duty cycle, and shall not exceed IPeak-2P-unb, as defined in Table 145–16 on any pair when PD PI pairs of the same polarity … "

Incorrectly reference the source of IPeak-2P-unb, which is not in the reference table.

SuggestedRemedy

Replace the called out text with,

"Single-signature PDs shall not exceed ICon-2P-unb for longer than TCUT-2P min and 5 % duty cycle, and shall not exceed IPeak-2P-unb, as defined in Equation (145-12) on any pair when PD PI pairs of the same polarity … "

Proposed Response *Response Status* **W**

WFP

TFTD

TFTD YD
TFDT: This comment is addressed by comment #65 and darshan_04_0517.pdf

Cl **145** *SC* **145.4.1** *P* **204** *L* **16** # 240

Walker, Dylan Cisco

Comment Type **TR** *Comment Status* **X** *Pres: Walker1*

Need to add the pertinent subclause for IEC 62368-1.

(D2.3 TODO - Comment #332)

SuggestedRemedy

See "Walker_1_0517_rev_4.pdf"

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.4.1** *P* **204** *L* **16** # 69

Darshan, Yair Mirosemi

Comment Type **ER** *Comment Status* **X** *Pres: Peker1*

In the text "Accessible external conductors are specified in subclause 6.2.1 b) of IEC 60950-1 and IEC 62368-1.", the 802.3bt requires to meet both standards IEC60950-1 (which will be withdrawn by the end of 2018) and IEC 62368-1. From a safety point of view, device or system need to satisfy just one of this standard. Therefore, we should change AND to OR.

SuggestedRemedy

Adopt Arkadiy_01_0517.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.4.1** *P* **204** *L* **16** # 121

Peker, Arkadiy Mirosemi

Comment Type **E** *Comment Status* **X** *Pres: Peker1*

In the text "Accessible external conductors are specified in subclause 6.2.1 b) of IEC 60950-1 and IEC 62368-1.", standard specifies IEC 60950-1 subclause 6.2.1b but does not specify similar IEC62368-1 subclause.
For consistency, we should add subclause of IEC62368-1

SuggestedRemedy

Adopt Arkadiy_01_0517.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.4.1** *P* **204** *L* **16** # 122

Peker, Arkadiy Mirosemi

Comment Type **E** *Comment Status* **X** *Pres: Peker1*

In the text "Accessible external conductors are specified in subclause 6.2.1 b) of IEC 60950-1 and IEC 62368-1.", the 802.3bt requires to meet both standards IEC60950-1 (which will be withdrawn by the end of 2018) and IEC 62368-1. From a safety point of view, device or system need to satisfy just one of this standard. Therefore, we should change AND to OR.

SuggestedRemedy

Adopt Arkadiy_01_0517.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.4.1** *P* **204** *L* **16** # 68

Darshan, Yair Mirosemi

Comment Type **ER** *Comment Status* **X** *Pres: Peker1*

In the text "Accessible external conductors are specified in subclause 6.2.1 b) of IEC 60950-1 and IEC 62368-1.", standard specifies IEC 60950-1 subclause 6.2.1b but does not specify similar IEC62368-1 subclause.
For consistency, we should add subclause of IEC62368-1

SuggestedRemedy

Adopt Arkadiy_01_0517.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.4.1** *P* **204** *L* **18** # 70

Darshan, Yair Mirosemi

Comment Type **TR** *Comment Status* **X** *Pres: Peker1*

In the text "This electrical isolation shall withstand at least one of the following electrical strength tests:", there is an ambiguity in current IEEE 802.3bt requirements for electrical isolation.
Customers may argue (and we have many such cases) that a product meet UL/IEC electrical isolation requirements but does not meet IEEE802.3. Customers believes that IEEE802.3 requirements are more stringent than UL/IEC and does not allow to remove protective components as it allowed in IEC 60950-1 5.2.2 Note 4 as follows:
“NOTE 4 Components providing a d.c. path in parallel with the insulation to be tested, such as discharge resistor for filter capacitors, voltage limiting devices or surge suppressors, should be disconnected.”
The requirements which allow to remove components as in Note 4 should be added to IEEE specs or at least IEEE802.3bt should have clear referal on this subject to IEC60950 or IEC62368.

SuggestedRemedy

Adopt Arkadiy_01_0517.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.4.1** *P* **204** *L* **18** # 123

Peker, Arkadiy Mirosemi

Comment Type **T** *Comment Status* **X** *Pres: Peker1*

In the text "This electrical isolation shall withstand at least one of the following electrical strength tests:", there is an ambiguity in current IEEE 802.3bt requirements for electrical isolation.
Customers may argue (and we have many such cases) that a product meet UL/IEC electrical isolation requirements but does not meet IEEE802.3. Customers believes that IEEE802.3 requirements are more stringent than UL/IEC and does not allow to remove protective components as it allowed in IEC 60950-1 5.2.2 Note 4 as follows:
“NOTE 4 Components providing a d.c. path in parallel with the insulation to be tested, such as discharge resistor for filter capacitors, voltage limiting devices or surge suppressors, should be disconnected.”
The requirements which allow to remove components as in Note 4 should be added to IEEE specs or at least IEEE802.3bt should have clear referal on this subject to IEC60950 or IEC62368.

SuggestedRemedy

Adopt Arkadiy_01_0517.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.4.1** *P* **204** *L* **20** # 241

Walker, Dylan Cisco

Comment Type **TR** *Comment Status* **X** *Pres: Walker1*

It's jumping the gun to require IEC 62368-1 compliance. Also, need to add the pertinent subclause for IEC 62368-1.

(D2.3 TODO - Comment #332)

SuggestedRemedy

See "Walker_1_0517_rev_4.pdf"

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.4.1** *P* **204** *L* **22** # 242

Walker, Dylan Cisco

Comment Type **TR** *Comment Status* **X** *Pres: Walker1*

It's jumping the gun to require IEC 62368-1 compliance. Also, need to add the pertinent subclause for IEC 62368-1.

(D2.3 TODO - Comment #332)

SuggestedRemedy

See "Walker_1_0517_rev_4.pdf"

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.4.1** *P* **204** *L* **23** # 243

Walker, Dylan Cisco

Comment Type **TR** *Comment Status* **X** *Pres: Walker1*

It's jumping the gun to require IEC 62368-1 compliance. Also, need to add the pertinent subclause for IEC 62368-1.

(D2.3 TODO - Comment #332)

SuggestedRemedy

See "Walker_1_0517_rev_4.pdf"

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.4.1** *P* **204** *L* **27** # 71

Darshan, Yair Mirosemi

Comment Type **TR** *Comment Status* **X** *Pres: Peker1*

IIEEE802.3bt has following compliance criteria for the electrical stength test: "There shall be no insulation breakdown, as defined in subclause 5.2.2 of IEC 60950-1 and IEC 62368-1, during the test. The resistance after the test shall be at least 2 M ohm, measured at 500 V dc". This compliance criteria aplies for a) and b) and c) electrical test procedures. However a) and b) compliance requirements are different than for c) impulse test. Requirements a) and b) compliance criteria per paragraph 5.2.2 IEC60950:
"There shall not be insulation breakdown during test. Insulation breakdown is considered to have occurred when the current that flows as a result of the application of the test voltage rapidly increases in an uncontrolled manner, that is the insulation does not restrict the flow of current".

For requirements c): per paragraph 6.2.23 IEC60950-1:
"For impulse tests, damage to insulation is verified in one of two ways, as follows:
– during the application of the impulses, by observation of oscillograms. Surge suppressor operation or breakdown through insulation is judged from the shape of an oscillogram.
– after application of all the impulses, by an insulation resistance test. Disconnection of surge suppressors is permitted while insulation resistance is being measured. The test voltage is 500 V d.c. or, if surge suppressors are left in place, a d.c. test voltage that is 10 % less than the surge suppressor operating or striking voltage. The insulation resistance shall not be less than 2 MΩ."

Therefore IEEE requirements that" The resistance after the test shall be at least 2 Mohm , measured at 500 V dc" referring just to impulse test c) and not to steady stay tests a) and b). Therefore compliance critea should be removed at all from IEEE802.3bt or it need to be specify correctly for case a) and b) and separately to case c) according to requirements of IEC60950 or IEC62368.

SuggestedRemedy

Adopt Arkadiy_01_0517.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.4.1** *P* **204** *L* **27** # 244

Walker, Dylan Cisco

Comment Type **TR** *Comment Status* **X** *Pres: Walker1*

It's jumping the gun to require IEC 62368-1 compliance. Also, need to add the pertinent subclause for IEC 62368-1.

(D2.3 TODO - Comment #332)

SuggestedRemedy

See "Walker_1_0517_rev_4.pdf"

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.4.1** *P* **204** *L* **27** # 125

Peker, Arkadiy Mirosemi

Comment Type **E** *Comment Status* **X** *Pres: Peker1*

The text " There shall be no insulation breakdown, as defined in subclause 5.2.2 of IEC 60950-1 and IEC 62368-1, during the test. The resistance after the test shall be at least 2 M ohm, measured at 500 V dc." specifies IEC 60950-1 subclause 5.2.2 but does not specify similar IEC62368-1 subclause. For consistency , we should add subclause 5.4.9.2 of IEC62368-1.
Therefore in IEEE 802.3bt text can be change from "IEC60950-1 and IEC62368-1: to "IEC60950-1 or IEC62368-1".
See arkadiy_01_0517.pdf for more issues about this text.

SuggestedRemedy

Adopt arkadiy_01_0517.pdf.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.4.1** *P* **204** *L* **27** # 124

Peker, Arkadiy Mirosemi

Comment Type **T** *Comment Status* **X** *Pres: Peker1*

IIEEE802.3bt has following compliance criteria for the electrical stength test: "There shall be no insulation breakdown, as defined in subclause 5.2.2 of IEC 60950-1 and IEC 62368-1, during the test. The resistance after the test shall be at least 2 M ohm, measured at 500 V dc". This compliance criteria aplies for a) and b) and c) electrical test procedures. However a) and b) compliance requirements are different than for c) impulse test.
Requirements a) and b) compliance criteria per paragraph 5.2.2 IEC60950:
"There shall not be insulation breakdown during test. Insulation breakdown is considered to have occurred when the current that flows as a result of the application of the test voltage rapidly increases in an uncontrolled manner, that is the insulation does not restrict the flow of current".

For requirements c): per paragraph 6.2.23 IEC60950-1:
"For impulse tests, damage to insulation is verified in one of two ways, as follows:
– during the application of the impulses, by observation of oscillograms. Surge suppressor operation or breakdown through insulation is judged from the shape of an oscillogram.
– after application of all the impulses, by an insulation resistance test. Disconnection of surge suppressors is permitted while insulation resistance is being measured. The test voltage is 500 V d.c. or, if surge suppressors are left in place, a d.c. test voltage that is 10 % less than the surge suppressor operating or striking voltage. The insulation resistance shall not be less than 2 MΩ."

Therefore IEEE requirements that" The resistance after the test shall be at least 2 Mohm , measured at 500 V dc" referring just to impulse test c) and not to steady stay tests a) and b). Therefore compliance critea should be removed at all from IEEE802.3bt or it need to be specify correctly for case a) and b) and separately to case c) according to requirements of IEC60950 or IEC62368.

SuggestedRemedy

Adopt Arkadiy_01_0517.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.4.1** *P* **204** *L* **27** # 72

Darshan, Yair Mirosemi

Comment Type **ER** *Comment Status* **X** *Pres: Peker1*

The text " There shall be no insulation breakdown, as defined in subclause 5.2.2 of IEC 60950-1 and IEC 62368-1, during the test. The resistance after the test shall be at least 2 M ohm, measured at 500 V dc." specifies IEC 60950-1 subclause 5.2.2 but does not specify similar IEC62368-1 subclause. For consistency , we should add subclause 5.4.9.2 of IEC62368-1.
Therefore in IEEE 802.3bt text can be change from "IEC60950-1 and IEC62368-1: to "IEC60950-1 or IEC62368-1".
See arkadiy_01_0517.pdf for more issues about this text.

SuggestedRemedy

Adopt arkadiy_01_0517.pdf.

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.4.1.1.2** *P* **205** *L* **19** # 245

Walker, Dylan Cisco

Comment Type **ER** *Comment Status* **X** *Pres: Walker1*

"Guidance on these requirements may be found in Section 6 of IEC 60950-1 and IEC 62368-1, as well as any local and national codes related to safety."

Sentence can be slightly modified to clarify that the reference to "Section 6" only applies to IEC 60950-1.

(D2.3 TODO - Comment #332)

SuggestedRemedy

See "Walker_1_0517_rev_4.pdf"

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.4.9** *P* **211** *L* **4** # 177

Thompson, Geoff GraCaSI S.A.

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

Current text in P802.3bt/D2.4: (Text and figure are unnecessary and confusing)

SuggestedRemedy

Proposed text for P802.3bt/D2.5: Delete cl. 145.4.9 and Figure 145-38

Proposed Response *Response Status* **W**

TFTD

TFTD YD
TFDT: I am strongly object to delete Figure 145-38. Instead to delete it suggest a fix that prevents confusion. This drawing exists in 802.3 clause 33 for 14 years and it was never confusing.

Cl **145** *SC* **145.4.9** *P* **213** *L* **1** # 179

Thompson, Geoff GraCaSI S.A.

Comment Type **ER** *Comment Status* **D** *Channel*

Current text in P802.3bt/D2.4: The requirements for the two pair Category 5 channel are found in 25.4.9. (Not true, it is the “link segment” which is defined)

SuggestedRemedy

Proposed text for P802.3bt/D2.5: The requirements for the two pair Category 5 link segment for 100BASE-Tx are found in 25.4.9. Specification of 4-pair cabling is beyond the scope of cl. 25.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

REF 204

TFTD LY
We should not state what is beyond the scope of Clause 25 (strike last sentence from remedy).

Cl **145** *SC* **145.4.9.1.7** *P* **215** *L* **41** # 108

Jones, Chad Cisco

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

#ABSOLUTE To ensure the total alien NEXT
loss and alien FEXT loss coupled between link segments is limited, multiple disturber alien near-end crosstalk (MDANEXT) loss and multiple disturber alien FEXT (MDAFEXT) loss is specified.

SuggestedRemedy

change to: To bound the total alien NEXT
loss and alien FEXT loss coupled between link segments, multiple disturber alien near-end crosstalk (MDANEXT) loss and multiple disturber alien FEXT (MDAFEXT) loss is specified.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD LY
Prefer the word 'limit' over 'bound', also 'is' should be 'are':
"To limit the total alien NEXT loss and alien FEXT loss coupled between link segments, multiple disturber alien near-end crosstalk (MDANEXT) loss and multiple disturber alien FEXT (MDAFEXT) loss are specified."

Cl **145** *SC* **145.5.3.2** *P* **218** *L* **41** # 145

Schindler, Fred Seen Simply, Cisco, T

Comment Type **TR** *Comment Status* **X** *Pres: Darshan1*

Three attributes are listed in green font that should be located in clause 30 of our amended document.

page 218
aLldpXdot3LocReady

page 227
aLldpXdot3LocReadyA
aLldpXdot3LocReadyB

A solution is provide below and should be reviewed by participants to improve the text before submission.

SuggestedRemedy

Related cross references to these variables also need to be fixed.

Add the following text in the appropriate place in Clause 30.

30.xxx aLldpXdot3LocReady
ATTRIBUTE
APPROPRIATE SYNTAX:
An ENUMBERATED VALUE that has one of the following entries:
pReadyPSE PSE
pReadyPD PD
BEHAVIOUR DEFINED AS:
A read-only implementation-specific value used to indicate whether the Data Link Layer classification has been initialized by the by the local system.;

30.xxx aLldpXdot3LocReadyA
ATTRIBUTE
APPROPRIATE SYNTAX:
An ENUMBERATED VALUE that has one of the following entries:
pReadyPSE PSE
pReadyPD PD
BEHAVIOUR DEFINED AS:
A read-only implementation-specific value used to indicate whether the Data Link Layer classification has been initialized by the by the local system for Alternative A for a PSE, or for Mode A for a PD.;

30.xxx aLldpXdot3LocReadyB
ATTRIBUTE
APPROPRIATE SYNTAX:

An ENUMBERATED VALUE that has one of the following entries:
pReadyPSE PSE
pReadyPD PD
BEHAVIOUR DEFINED AS:
A read-only implementation-specific value used to indicate whether the Data Link Layer classification has been initialized by the by the local system for Alternative B for a PSE, or for Mode B for a PD.;

Proposed Response *Response Status* **W**

TFTD, needs review.

TFTD YD
TFDT: It is addressed by darshan_01_0517.pdf

Cl **145** *SC* **145.5.3.6.2** *P* **228** *L* **26** # 74

Darshan, Yair Mirosemi

Comment Type **TR** *Comment Status* **X** *Pres: Darshan2*

pse_power_update_alt(X) variable is used by the state machine but is missing from the variable list in 145.5.3.6.2. We do have pse_power_update_pri and pse_power_update_sec that do it but we may need away to transform from _pri and _sec to _alt(X).

SuggestedRemedy

Adopt darshan_02_0517.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.5.3.6.2** *P* **229** *L* **34** # 77

Darshan, Yair Mirosemi

Comment Type **TR** *Comment Status* **X** *Pres: Darshan1*

In the text "pse_dll_ready_alt(X) An implementation-specific control variable that indicates that the PSE has initialized Data Link Layer classification. This variable maps into the aLldpXdot3LocReady attribute (30.12.2.1.20)." there are few updates need to be made:
1) the aLldpXdot3LocReady need to be "aLldpXdot3LocReadyA and aLldpXdot3LocReadyB" (they are already used in the DLL state machine and exist in the variable list.
2) The aLldpXdot3LocReadyA and aLldpXdot3LocReadyB are not defined in clause 30.
3) The aLldpXdot3LocReadyA, aLldpXdot3LocReadyB are not included in Table 30-7.
4. The link for 30.12.2.1.20 is correct for aLldpXdot3LocReady which is used for single-signature DLL state machine and is incorrect for the dual-signature DLL state machine.

SuggestedRemedy

Adopt darshan_01_0517.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.5.3.6.5** *P* **231** *L* **51** # 78

Darshan, Yair Mirosemi

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

The changes for the title of figure 145-45 was not implemented per darshan_03_0317Rev007F.pdf

SuggestedRemedy

Change from "Figure 145–45—PSE power control state diagram when connected to a dual-signature PD"
To "Figure 145–45—PSE power control state diagram Alternative (X) when connected to a dual-signature PD mode (X)"

Proposed Response *Response Status* **W**

TFTD

That new title is quite confusing.

TFTD YD
TFDT: It was approved in darshan_03_0317Rev007F.pdf. You may submit a comment to change it.

Cl **145** *SC* **145.5.3.7.2** *P* **233** *L* **29** # 79

Darshan, Yair Mirosemi

Comment Type **TR** *Comment Status* **X** *Pres: Darshan1*

In the text" pd_dll_ready_mode(X) An implementation-specific control variable that indicates that the PD has initialized Data Link Layer classification for mode(X). This variable maps into the aLldpXdot3LocReady attribute (30.12.2.1.20)." there are few updates need to be made:
1) the aLldpXdot3LocReady need to be "aLldpXdot3LocReadyA and aLldpXdot3LocReadyB" (they are already used in the DLL state machine and exist in the variable list.
2) The aLldpXdot3LocReadyA and aLldpXdot3LocReadyB are not defined in clause 30.
3) The aLldpXdot3LocReadyA, aLldpXdot3LocReadyB are not included in Table 30-7.
4. The link for 30.12.2.1.20 is correct for aLldpXdot3LocReady which is used for single-signature DLL and is incorrect for the dual-signature PD.

SuggestedRemedy

Adopt darshan_01_0517.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.5.3.7.5** *P* **234** *L* **51** # 80

Darshan, Yair Mirosemi

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

The changes for the title of figure 145-46 was not implemented per darshan_03_0317Rev007F.pdf

SuggestedRemedy

Change from "Figure 145–46—Dual-signature PD power control state diagram"
To "Figure 145–46—Dual-signature PD power control state diagram mode(X)"

Proposed Response *Response Status* **W**

TFTD

Waiting for outcome of 78

TFTD YD
TFDT: See my response to 78.

Cl **145** *SC* **145.6.1** *P* **238** *L* **19** # 239

Walker, Dylan Cisco

Comment Type **TR** *Comment Status* **X** *Pres: Walker1*

To be consistent with other references to safety standards in our standard, we should provide the option to conform to IEC 62368-1, but it's jumping the gun to require IEC 62368-1 compliance.

(D2.3 TODO - Comment #332)

SuggestedRemedy

See "Walker_1_0517_rev_4.pdf"

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.7.3.8** *P* **262** *L* **19** # 246

Walker, Dylan Cisco

Comment Type **TR** *Comment Status* **X** *Pres: Walker1*

PICS ES1 needs to be updated to include the option for IEC 62368-1 conformance.

(D2.3 TODO - Comment #332)

SuggestedRemedy

See "Walker_1_0517_rev_4.pdf"

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.7.3.8** *P* **262** *L* **38** # 247

Walker, Dylan Cisco

Comment Type **TR** *Comment Status* **X** *Pres: Walker1*

PICS PSEES1 needs to be updated to include the option for Power Source Class 2 in accordance with IEC 62368-1.

(D2.3 TODO - Comment #332)

SuggestedRemedy

See "Walker_1_0517_rev_4.pdf"

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145A** *SC* **145A** *P* **265** *L* **1** # 289

Yseboodt, Lennart Philips

Comment Type **E** *Comment Status* **X** *Pres: Yseboodt3*

TODO Lennart: introduce Annex that shows an overview of ALL PSEs and PDs.

I can't believe I agreed to do this...

SuggestedRemedy

Adopt yseboodt_03_0517_overviewannex.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145** *SC* **145.A.2** *P* **266** *L* **2** # 186

Thompson, Geoff GraCaSI S.A.

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

Current text in P802.3bt/D2.4: Channel and Rch

SuggestedRemedy

Proposed text for P802.3bt/D2.5: Change Channel to Link Section and Rch to RLS.
Change alignment of both PI s so that conductors stop at the PI not through.

Proposed Response *Response Status* **W**

TFTD

See 203

Cl **145A** *SC* **145A.3** *P* **266** *L* **23** # 81

Darshan, Yair Mirosemi

Comment Type **ER** *Comment Status* **D** *Annex*

In the text "Current unbalance requirements (RPSE_min, RPSE_max and ICon-2P_unb) of a PSE is met with Rload_max and Rload_min as specified in Table 145–17." we have few issues:
1. Rload_max and Rload_min are specified in Equation 145-16, Eququation 145-17 and Table 145–17 and not just Table 145-17.
2. Rpese_min and Rpse_max is not met with Rload_max and Rload_min. They need to conform only to Equation 145-15. Only Icon-2P_unb need to be met with Rload_max and Rload_min.
3. Current unbalance requirements are plural and yet there is "is met with ..." which is wrong.

SuggestedRemedy

Change from "Current unbalance requirements (RPSE_min, RPSE_max and ICon-2P-unb) of a PSE is met with Rload_max and Rload_min as specified in Table 145–17."
To "Current unbalance requirements (RPSE_min, RPSE_max and ICon-2P-unb) of a PSE are met with Rload_max and Rload_min as specified in Equation 145-16, Eququation 145-17, and Table 145–17."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD LY
The only current unbalance _requirement_ is ICon-2P-unb.
Further more, a _current_ unbalance requirement cannot be expressed as resistance anyway.
RPSE_min/max is informative.
Remedy:
"PSE current unbalance requirements need to be met with Rload_max and Rload_min applied as specified
in Equation 145-16, Eququation 145-17, and Table 145–17."

Cl **145A** *SC* **145A.3** *P* **266** *L* **34** # 82

Darshan, Yair — Mirosemi

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

In the text "Figure 145–22 illustrates the relationship between effective resistances at the PSE PI as specified by Equation (145–15) and Rload_min and Rload_max as specified in Table 145–17.": Rload_max and Rload_min are specified in Equation 145-16, Eququation 145-17 and Table 145–17 and not just Table 145-17.

SuggestedRemedy

Change from "Current unbalance requirements (RPSE_min, RPSE_max and ICon-2P-unb) of a PSE is met with Rload_max and Rload_min as specified in Table 145–17."
To " ICon-2P-unb is met with Rload_max and Rload_min as specified in Equation 145-16, Eququation 145-17, and Table 145–17."

Proposed Response *Response Status* **W**

TFTD

The comment and suggested remedy don't seem to match.

Cl **145** *SC* **145.A.3** *P* **267** *L* **10** # 189

Thompson, Geoff — GraCaSI S.A.

Comment Type **ER** *Comment Status* **X** *Pres: Darshan12*

Current text in P802.3bt/D2.4: This measurement illustration is has problems for the following reasons: 1) The device on the right in a circle is not defined and by the implication of having a different shape is not just a resistance load. 2) There is no PI defined in this diagram. (I gather that there is only one but I am not sure) 3) The right end of the “End to end pair-to-pair resistance” is not defined. Since it is not defined as the PD PI, I assume that it is buried in the PD (which one has to assume is a 3rd party device without test points as indicated in the diagram).

SuggestedRemedy

Proposed text for P802.3bt/D2.5: Just provide a diagram of a test network to be used as a load at the PSE PI and a table of values for the test sequence that needs to be stepped through to perform the test.

Proposed Response *Response Status* **W**

TFTD

TFTD YD
TFDT: See darshan_12_0517.pdf

Cl **145A** *SC* **145A.3.2** *P* **267** *L* **26** # 41

Bennett, Ken — Sifos Technologies, In

Comment Type **T** *Comment Status* **X** *Pres: Bennet1*

This addresses the TODO for draft 2.3, #130,#151. The Effective resistance RPSE measurement in Annex 145A.3.2 was evaluated.

SuggestedRemedy

See bennett_01_0517.pdf

Proposed Response *Response Status* **W**

WFP

TFTD

Cl **145A** *SC* **145A.4** *P* **268** *L* **16** # 84

Darshan, Yair — Mirosemi

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

The title of subclause 145A.4 was not implemented per the baseline darshan_01_0317Rev008.

SuggestedRemedy

Change from "145A.4 PD resistance and current unbalance" To "145A.4 PD PI resistance and current unbalance"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD LY
What does adding the word 'PI' in that subclause title add or do?
Unneeded change.

Cl **33C** *SC* **33C.1.2** *P* **333** *L* **18** # 157

Stewart, Heath — Analog Devices

Comment Type **ER** *Comment Status* **D** *Annex*

The term "quasi-simultaneous" has been introduced. This is a very odd term and should be abolished. What was meant here?

SuggestedRemedy

Remove quasi and figure out why this label is here…

Proposed Response *Response Status* **W**

TFTD

Heath, I am not sure what happened to this comment but I don't think the Clause, subclause, page, or line is correct. I see the term quasi used twice in Annex 145B. Is that what you are referring to?