*Cl* **0** *SC* **0** *P* **0** *L* **0** # r01-1

Turner, Michelle

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

This draft meets all editorial requirements.

*SuggestedRemedy*

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8.4** *P* **203** *L* **25** # r01-2

Brillhart, Theodore Fluke Corporation

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

The note under Figure 145-30 points out that a dual signature PD may have a single load. It does not indicate whether that common load is isolated from the pair-sets or not. This implies that a dual signature PD might tie Vpse- (Mode A) to Vpse- (Mode B), and leaving Vpse+ (mode A) and VPse+ (mode B) independent. This would meet all the requirements for measuring signature resistors and classification currents. Alternatively, the PD could tie Vpse+ (Mode A) to Vpse+ (Mode B) together, leaving the negative sides independent. This would also meet all the signature and classification requirements. However, the first connection would prevent the PSE from correctly measuring currents on the low side of the PSE output, and the second would prevent the PSE from measuring currents on the high side of the PSE output. Since the specification seems to allow both, there is no way to create a reliable connection check from the PSE.

It would appear that somewhere in the specification, a dual signature PD must be constrained to prevent 'sharing' of current between the two pairsets. This constraint does not appear to exist in the current draft. Recommend to explicitly add this constraint. One place to do this might be in the definition of a dual-signature PD; section 1.4.186a.

*SuggestedRemedy*

Page 24, SubClause 1.4, line 19

From:
1.4.186a dual-signature PD: A PD that has independent detection signatures, class signatures, and maintain power signatures on each pairset (See IEEE 802.3, Clause 145).

Change to:
1.4.186a dual-signature PD: A PD that has independent detection signatures, class signatures, and maintain power signatures on each pairset, and where outgoing and return currents related to detection signatures, class signatures, and maintain power signatures are restricted to that pairset. (See IEEE 802.3, Clause 145).

Note: this is one among several likely options for introducing this constraint into the standard. The commenter is not wed to this proposal and will likely accept any resolution that produces clear guidance.

*Proposed Response* *Response Status* **O**

*Cl* **1** *SC* **1.4.338** *P* **24** *L* **41** # r01-3

Anslow, Peter Ciena Corporation

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

Comment i-2 was accepted in principle, but the change to the base text of 1.4.338 has not been done correctly.
When an amendment changes text that has already been changed by a prior amendment, the base text for the second amendment is the text as amended by the first amendment. This text is therefore shown without underline or strikethrough font. The only text in underline or strikethrough font is for changes being made by this amendment, not for changes already made by IEEE Std 802.3bu-2016.

*SuggestedRemedy*

Replace the current text of 1.4.338 with:
A DTE or midspan device that provides the power to a single link section. PSEs are defined for use with two different types of balanced twisted-pair PHYs. When used with 2 or 4 pair balanced twisted-pair (BASE-T) PHYs, (see IEEE Std 802.3, Clause 33<u> or Clause 145</u>), DTE powering is intended to provide a single 10BASE-T, 100BASE-TX, <s> or </s>1000BASE-T<u>, 2.5GBASE-T, 5GBASE-T, or 10GBASE-T</u> device with a unified interface for both the data it requires and the power to process these data. When used with single balanced twisted-pair (BASE-T1) PHYs (see IEEE Std 802.3, Clause 104), DTE powering is intended to provide a single 100BASE-T1 or 1000BASE-T1 device with a unified interface for both the data it requires and the power to process these data. A PSE used with balanced single twisted-pair PHYs is also referred to as a PoDL PSE.
<u>A DTE Power over Ethernet (Clause 33 and Clause 145) device that provides the power to a single link section. Power over Ethernet is intended to provide a single 10BASE-T, 100BASE-TX, 1000BASE-T, 2.5GBASE-T, 5GBASE-T, or 10GBASE-T device with a unified interface for both the data it requires and the power to process these data.</u>
Where <u> and </u> denote the start and end of underline font and <s> and </s> denote the start and end of strikethrough font.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.2.5** *P* **31** *L* **47** # r01-4

Anslow, Peter Ciena Corporation

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

The editing instruction:
"Delete the "oPD managed object class" and "aPDID" rows as well as the "PD Basic Package (mandatory)" column from Table 30-4. Delete the row for "aPSEShortCounter" in Table 30-4."
makes changes to Table 30-4. However, now that other subclauses have been added to 30.9.1.1, new rows are needed in this table.

*SuggestedRemedy*

Bring Table 30-4 into the draft and show all of the changes to it.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.2.5** *P* **32** *L* **7** # r01-5

Anslow, Peter Ciena Corporation

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

As the names of "aLldpXdot3LocPowerPairControlable" and "aLldpXdot3RemPowerPairControlable" have been changes (to have a double l) and "aLldpXdot3LocReducedOperationPowerValue" has been deleted, corresponding changes have to be made to Table 30-7.

*SuggestedRemedy*

Show the changes for "aLldpXdot3LocPowerPairControlable" and "aLldpXdot3RemPowerPairControlable" and the deletion of "aLldpXdot3LocReducedOperationPowerValue" in Table 30-7.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1** *P* **35** *L* **9** # r01-6

Anslow, Peter Ciena Corporation

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

The editing instructions for subclauses in 30.9.1.1 are nested which is somewhat confusing. Also, adding 30.9.1.1.9a and 30.9.1.1.9b, then deleting 30.9.1.1.10 and then changing 30.9.1.1.10, which was formerly 30.9.1.1.11 and then adding 30.9.1.1.10a and 30.9.1.1.10b is also confusing.

*SuggestedRemedy*

Replace the current editing instructions:
"Change 30.9.1.1.2 through 30.9.1.1.9 as follows:
Insert new subclause 30.9.1.1.5a and 30.9.1.1.5b as follows:
Insert new subclause 30.9.1.1.7a and 30.9.1.1.7b as follows
Insert new subclause 30.9.1.1.8a and 30.9.1.1.8b as follows:
Insert new subclause 30.9.1.1.8a and 30.9.1.1.8b as follows: [note incorrect subclause numbers, should be 9a and 9b]
Delete 30.9.1.1.10.
Change 30.9.1.1.10 (renumbered from 30.9.1.1.11 by the deletion of 30.9.1.1.10 above) as follows:
Insert new subclause 30.9.1.1.10a and 30.9.1.1.10b as follows:"
with:
"Change 30.9.1.1.2 through 30.9.1.1.5 as follows:
Insert new subclause 30.9.1.1.5a and 30.9.1.1.5b as follows:
Change 30.9.1.1.6 and 30.9.1.1.7 as follows:
Insert new subclause 30.9.1.1.7a and 30.9.1.1.7b as follows:
Change 30.9.1.1.8 as follows:
Insert new subclause 30.9.1.1.8a and 30.9.1.1.8b as follows:
Change 30.9.1.1.9 as follows:
Insert new subclause 30.9.1.1.9a as follows:
Delete 30.9.1.1.10 and insert a new 30.9.1.1.10 as follows:
Change 30.9.1.1.11 as follows:
Insert new subclause 30.9.1.1.11a and 30.9.1.1.11b as follows: "
in the appropriate places, making the new subclause for aPSEOverLoadCounterB 30.9.1.1.10

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1.9a** *P* **39** *L* **46** # r01-7

Anslow, Peter Ciena Corporation

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

The new subclause for "aPSEOverLoadCounterB" should be 30.9.1.1.9b

*SuggestedRemedy*

Re-number it to 30.9.1.1.9b

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1.5a** *P* **37** *L* **4** # r01-8

Anslow, Peter Ciena Corporation

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

The semicolon on line 4 should not be there as this is not the end of the BEHAVIOUR DEFINED AS: section. That is on line 8 where there is already a semicolon. (see example in 30.9.1.1.5).
Same issue in 30.9.1.1.5b

*SuggestedRemedy*

Delete the semicolons on line 4 and line 26

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1.5b** *P* **37** *L* **27** # r01-9

Anslow, Peter Ciena Corporation

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

The text at the end of 30.9.1.1.5b seems to be the equivalent to that at the end of 30.9.1.1.5a, so it should start with "NOTE--"

*SuggestedRemedy*

Add "NOTE--" at the start of the text.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1.6** *P* **37** *L* **54** # r01-10

Anslow, Peter Ciena Corporation

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

"33.5.1.2.10" is an external cross-reference, so it should have character tag "External" applied.
Same issue in 30.9.1.1.7 with "33.5.1.2.6"

*SuggestedRemedy*

Apply character tag "External" to "33.5.1.2.10" and "33.5.1.2.6".

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.2.1.18a** *P* **43** *L* **14** # r01-11

Anslow, Peter Ciena Corporation

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

In the editing instruction, "30.12.2.1.18z15" should be "30.12.2.1.18z17" and also the inserted subclauses "30.12.2.1.18aa" through "30.12.2.1.18ab15" should be numbered as "30.12.2.1.18z1" through "30.12.2.1.18z17".
See http://www.ieee802.org/3/WG_tools/editorial/requirements/words.html#numb

*SuggestedRemedy*

In the editing instruction, change "30.12.2.1.18z15" to "30.12.2.1.18z17" and also re-number subclauses "30.12.2.1.18aa" through "30.12.2.1.18ab15" to "30.12.2.1.18z1" through "30.12.2.1.18z17".

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.2.1.18o** *P* **47** *L* **2** # r01-12

Anslow, Peter Ciena Corporation

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

According to http://www.ieee802.org/3/WG_tools/editorial/requirements/words.html#boole since this use of Boolean is not a keyword "the capitalization Boolean should always be used (and not boolean)".

*SuggestedRemedy*

Change the following occurrences of "boolean" to "Boolean":
Page 47, line 2
Page 57, lines 3, 23, 32
Page 225, lines 3, 10
Page 229, line 27

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.3.1.18a** *P* **53** *L* **38** # r01-13

Anslow, Peter Ciena Corporation

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

In the editing instruction, "30.12.3.1.18z13" should be "30.12.3.1.18z15" and also the inserted subclauses "30.12.3.1.18aa" through "30.12.3.1.18ab13" should be numbered as "30.12.3.1.18z1" through "30.12.3.1.18z15".
See http://www.ieee802.org/3/WG_tools/editorial/requirements/words.html#numb

*SuggestedRemedy*

In the editing instruction, change "30.12.3.1.18z13" to "30.12.3.1.18z15" and also re-number subclauses "30.12.3.1.18aa" through "30.12.3.1.18ab13" to "30.12.3.1.18z1" through "30.12.3.1.18z15".

*Proposed Response* *Response Status* **O**

*Cl* **33** *SC* **33.4.9.2.1** *P* **71** *L* **42** # r01-14

Anslow, Peter Ciena Corporation

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

The editing instructions and subclause numbering for 33.4.9.2.1 up to 33.4.9.3.2 are garbled (e.g. a change instruction for a new subclause, etc.).
The base document has:
33.4.9.1.3 Return loss
33.4.9.1.4 Work area or equipment cable Midspan PSE
33.4.9.2 Midspan signal path requirements
33.4.9.2.1 Alternative A Midspan PSE signal path transfer function

Attempting to understand the intent of the draft, it appears to be to create:
33.4.9.1.3 Return loss [changed subclause]
33.4.9.2 Cord Midspan PSE [changed subclause re-numbered from 33.4.9.1.4]
33.4.9.2.1 Maximum link delay [new subclause]
33.4.9.2.2 Maximum link delay skew [new subclause]
33.4.9.3 Coupling parameters between link segments [new subclause]
33.4.9.3.1 Multiple disturber power sum alien near-end crosstalk (PSANEXT) loss [new subclause]
33.4.9.3.2 Multiple disturber power sum alien far-end crosstalk (PSAFEXT) loss [new subclause]
33.4.9.4 Midspan signal path requirements [re-numbered subclause]
33.4.9.4.1 Alternative A Midspan PSE signal path transfer function [re-numbered subclause]

Assuming that this is correct, then a scheme in line with usual 802.3 re-numbering rules would be:
33.4.9.1.3 Return loss [changed subclause]
33.4.9.1a Cord Midspan PSE [changed subclause re-numbered from 33.4.9.1.4]
33.4.9.1a.1 Maximum link delay [new subclause]
33.4.9.1a.2 Maximum link delay skew [new subclause]
33.4.9.1b Coupling parameters between link segments [new subclause]
33.4.9.1b.1 Multiple disturber power sum alien near-end crosstalk (PSANEXT) loss [new subclause]
33.4.9.1b.2 Multiple disturber power sum alien far-end crosstalk (PSAFEXT) loss [new subclause]
33.4.9.2 Midspan signal path requirements [unaltered subclause]
33.4.9.2.1 Alternative A Midspan PSE signal path transfer function [unaltered subclause]

*SuggestedRemedy*

On page 71, line 21, change the editing instruction to:
"Change the title and text of 33.4.9.1.4 and re-number it to 33.4.9.1a as follows:"
On page 71, line 42, change the editing instruction to:
"Insert 33.4.9.1a.1, 33.4.9.1a.2, and 33.4.9.1b (including its subclauses) as follows:"
On page 72, line 18, remove the "change" editing instruction.
Re-number the headings to:
33.4.9.1a Cord Midspan PSE
33.4.9.1a.1 Maximum link delay
33.4.9.1a.2 Maximum link delay skew
33.4.9.1b Coupling parameters between link segments
33.4.9.1b.1 Multiple disturber power sum alien near-end crosstalk (PSANEXT) loss
33.4.9.1b.2 Multiple disturber power sum alien far-end crosstalk (PSAFEXT) loss

*Proposed Response* *Response Status* **O**

*Cl* **33** *SC* **33.8.2.2** *P* **74** *L* **8** # r01-15

Anslow, Peter Ciena Corporation

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

"IEEE Std 802.3-201x" should be "IEEE Std 802.3bt-201x"

*SuggestedRemedy*

Change "IEEE Std 802.3-201x" to "IEEE Std 802.3bt-201x"

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.4** *P* **83** *L* **3** # r01-16

Anslow, Peter Ciena Corporation

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

The editing instruction only refers to Table 79-4, so the text of 79.3.2.4 (which is unchanged) should not be shown.

*SuggestedRemedy*

delete the text in 79.3.2.4

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.5** *P* **83** *L* **50** # r01-17

Anslow, Peter Ciena Corporation

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

"33.6.3.3" should be a cross-reference here and in 79.3.2.6

*SuggestedRemedy*

Make "33.6.3.3" a cross-reference here and in 79.3.2.6

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.5** *P* **83** *L* **52** # r01-18

Anslow, Peter — Ciena Corporation

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

The editing instruction: "Delete Equation 79-1" is not needed as the change is already covered by the editing instruction: "Change 79.3.2.5 as follows:".
Similarly, the editing instruction: "Delete Equation 79-2" on page 84 is not needed.

*SuggestedRemedy*

Delete both editing instructions.

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.5** *P* **84** *L* **14** # r01-19

Anslow, Peter — Ciena Corporation

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

The base version of 79.3.2.5 has "(see 33.3.7.2)" and 33.3.7.2 is "Input average power".
The draft has: "(see <u>33.3.8.2 and 145.3.8.2</u>)" where <u> and </u> are the start and end of underline font.
"33.3.7.2" has disappeared and 33.3.8.2 in underline font has replaced it, but 33.3.8.2 does not exist.

*SuggestedRemedy*

Change "33.3.8.2" to "33.3.7.2" without the underline font.

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.6c.1** *P* **85** *L* **52** # r01-20

Anslow, Peter — Ciena Corporation

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

This says "the "PSE allocated power value for Alternative A field" and "PSE allocated power value for Alternative B field" as specified in Table 79-6a and Table 79-6b." but the referenced fields are in Table 79-6c and Table 79-6d.

*SuggestedRemedy*

Change "in Table 79-6a and Table 79-6b" to "in Table 79-6c and Table 79-6d"

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.6c** *P* **85** *L* **45** # r01-21

Anslow, Peter — Ciena Corporation

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

The table referenced as Table 79-6c in 79.3.2.6c is the second Table 79-6c in the draft.

*SuggestedRemedy*

Change the table to be Table 79-6e and renumber the following tables currently shown as Table 79-6d through Table 79-6g to be Table 79-6f through Table 79-6i.

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.8.1** *P* **92** *L* **1** # r01-22

Anslow, Peter — Ciena Corporation

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

Table 79-7b is missing the table continuation variable

*SuggestedRemedy*

Place the cursor at the end of table title on first page. Then click on the Variables Tab and insert "Table Continuation" variable. This will add the (continued) on subsequent pages.

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.8.2** *P* **92** *L* **40** # r01-23

Anslow, Peter — Ciena Corporation

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

The table in 79.3.8.2 is Table 79-7d, but it should be Table 79-7c

*SuggestedRemedy*

Change the table to be Table 79-6c

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.5.3** *P* **97** *L* **7** # r01-24

Anslow, Peter Ciena Corporation

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

The editing instruction: "Insert new rows into the Table in 79.5.3 as follows:" does not say where the new rows are to be placed.

*SuggestedRemedy*

Change to: "Insert new rows at the end of the Table in 79.5.3 as follows:"

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.5.8** *P* **98** *L* **23** # r01-25

Anslow, Peter Ciena Corporation

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

In items PVT5 and PVT6, "Table 79-4" should be cross-references

*SuggestedRemedy*

Make "Table 79-4" cross-references In items PVT5 and PVT6.

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.5.8** *P* **99** *L* **38** # r01-26

Anslow, Peter Ciena Corporation

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

In item PVT26, "50 K<omega>" should have a lower case "K"

*SuggestedRemedy*

Change "K" to "k"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.1** *P* **103** *L* **22** # r01-27

Anslow, Peter Ciena Corporation

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

"Clause 14", "Clause 40", "Clause 55", and "Clause 126" should all be cross-references.

*SuggestedRemedy*

Make them all cross-references (and remove the character tag External)

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.3** *P* **164** *L* **4** # r01-28

Anslow, Peter Ciena Corporation

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

There are a number of instances of text that should be cross-references.

*SuggestedRemedy*

Change the following to cross-references:
"145.2.8.8" page 164, line 4
"145.1.3" page 168, line 23
"Table 145-19" page 176, line 35
"Table 145-41" page 244, line 7 (shouldn't this be Table 145-42?)
"Table 145-42" page 244, line 8 (shouldn't this be Table 145-43?)
"Equation (145-35)" page 270, line 8
"145.1.3" page 277, line 32

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.4** *P* **244** *L* **24** # r01-29

Anslow, Peter Ciena Corporation

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

A table footnote should not start "NOTE--" it is already a note.
Same issue with footnote to Table 145-43.
See comment #147 from Michelle Turner, Managing Editor, IEEE-SA, which resulted in the removal of "NOTE--" as documented in:
http://www.ieee802.org/3/maint/public/healey_2_0917.pdf#page=3

*SuggestedRemedy*

Delete "NOTE--" from the footnotes to Tables 145-42 and Table 145-43.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145** *P* **151** *L* **10** # r01-30

Anslow, Peter — Ciena Corporation

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

The response to unsatisfied comment i-1 against D3.0 was:
"We will work with editorial staff to try to clarify the style guide. Here is our opinion:
There is a distinction between an em-dash, which indicates 'a lack of data', and leaving a cell blank. Eg. For parameters that convey a range, having a blank 'Min' cell, does NOT indicate there is lack of data, rather that the minimum value is open-ended. An em-dash would convey an incorrect message. Em-dashes have been put in all cells where it is appropriate."
This interpretation of the style manual is different from the interpretation that has been used in recent amendments to IEEE Std 802.3. There is nothing different about Clause 145 that means that max or min cells without a value should be shown differently to those in other recent amendments.

*SuggestedRemedy*

Make sure all tables have an entry of em-dash or pointer to the requirement in currently blank min or max columns in accordance with all other recent amendments to IEEE 802.3. In particular, Tables 145-7, 145-8, 145-9, 145-10, 145-14, 145-16, 145-21, 145-28, 145-29, 145-32, 145-33.

*Proposed Response* *Response Status* **O**

*Cl* **1** *SC* **1.4** *P* **4** *L* **34** # r01-31

Rannow, R K — IEEE/SELF

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

1.4.313a pairset: Either of the two valid 4-conductor connections, Alternative A or Alternative B, as listed
in IEEE 802.3, 145.2.4. The PSE Alternative A and Alternative B connections are referred to as Mode A and
Mode B, respectively, at the PD appears to be an ambiguous statement. Is this eight (8) or four (4) wires?

*SuggestedRemedy*

"1.4.313a pairset: valid 4-conductor connections, Alternative A or Alternative B, as listed in IEEE 802.3, 145.2.4. ... "

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.1** *P* **103** *L* **19** # r01-32

Jones, Chad — Cisco Systems, Inc.

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

"The PSE is normally an element of the powering DTE but may, instead, be located within the cabling portion of the system."
This seems like a good spot to introduce the term Midspan which just pops up unintroduced a few pages later.

*SuggestedRemedy*

Add this sentence to the end of the 2nd paragraph in 145.2:
PSEs located within the cabling portion of the system are called Midspan PSEs, or simply Midspans.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.4** *P* **115** *L* **3** # r01-33

Jones, Chad — Cisco Systems, Inc.

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

"A PSE device may provide power via one or both of the two valid four-conductor connections named pairsets."
missing a comma

*SuggestedRemedy*

Change to: "A PSE device may provide power via one or both of the two valid four-conductor connections, named pairsets"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.3** *P* **118** *L* **1** # r01-34

Jones, Chad — Cisco Systems, Inc.

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

cut and paste error, says parallel and it should be staggered:
"For a dual-signature PD, parallel detection means that detection both pairsets is done in different Tdet cycles."

*SuggestedRemedy*

Change to : "For a dual-signature PD, staggered detection means that detection both pairsets is done in different Tdet cycles."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **120** *L* **7** # r01-35

Jones, Chad — Cisco Systems, Inc.

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

cut and paste error, pri should be sec:
error_condition_pri

*SuggestedRemedy*

Changed to: error_condition_sec

*Proposed Response* *Response Status* **O**

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*Cl* **145** *SC* **145.3.2** *P* **176** *L* **35** # r01-36

Jones, Chad — Cisco Systems, Inc.

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

reference to wrong table: "PDs shall be capable of accepting power in any valid 2-pair configuration and any valid 4-pair configuration as defined in Table 145-19."

*SuggestedRemedy*

Change to: "PDs shall be capable of accepting power in any valid 2-pair configuration and any valid 4-pair configuration as defined in Table 145-20."

*Proposed Response* *Response Status* **O**

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*Cl* **145** *SC* **145.3.8.2** *P* **201** *L* **26** # r01-37

Jones, Chad — Cisco Systems, Inc.

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

missing comma:
"The maximum average power, PClass_PD or PClass_PD-2P in Table 145-29 or PDMaxPowerValue in 145.5.3.3.3, including any peak power drawn per 145.3.8.4 COMMA is averaged over a 1 second sliding window."

*SuggestedRemedy*

change to:
"The maximum average power, PClass_PD or PClass_PD-2P in Table 145-29 or PDMaxPowerValue in 145.5.3.3.3, including any peak power drawn per 145.3.8.4, is averaged over a 1 second sliding window."

*Proposed Response* *Response Status* **O**

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*Cl* **145** *SC* **145.4.9.4** *P* **221** *L* **33** # r01-38

Jones, Chad — Cisco Systems, Inc.

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

the sentence: "Midspan PSEs intended for operation with 2.5G/5G/10GBASE-T (variants 3 through 5 in 145.4.9.1 and 145.4.9.2) are additionally required to meet the following parameters for coupling signals between ports relating to different link segments." - doesn't list the parameters.

*SuggestedRemedy*

List them.

*Proposed Response* *Response Status* **O**

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*Cl* **145C** *SC* **145C.1** *P* **287** *L* **28** # r01-39

Jones, Chad — Cisco Systems, Inc.

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

Pl=25W. Should be 25.5W

*SuggestedRemedy*

change to 25.5W

*Proposed Response* *Response Status* **O**

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*Cl* **145C** *SC* **145C.1** *P* **288** *L* **8** # r01-40

Jones, Chad — Cisco Systems, Inc.

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

Pl=25W. Should be 25.5W

*SuggestedRemedy*

change to 25.5W

*Proposed Response* *Response Status* **O**

*Cl* **145C** *SC* **145C.1** *P* **290** *L* **1** # r01-41

Jones, Chad — Cisco Systems, Inc.

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

Table 145C-1, column 3. Several entries are identical because this column is expressed in A with only two decimal places. This could lead to reader confusion as the values in the 4th column are siginficantly different but are caluclated using the value in column 3.

*SuggestedRemedy*

change heading to Icond (mA) and change the values in the column to:
347
352
358
363
369
375
382
389
397
406
416
427
433

*Proposed Response* *Response Status* **O**

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*Cl* **145C** *SC* **145C.1** *P* **287** *L* **1** # r01-42

Jones, Chad — Cisco Systems, Inc.

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

*** Comment submitted with the file 94817600003-Annex_145C_markup.docx attached ***

section is new and contains many editorial errors.

*SuggestedRemedy*

see the attached Annex_145C_markup.docx for editorial corrections, submitted for adoption.

*Proposed Response* *Response Status* **O**

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*Cl* **25** *SC* **25.4.5** *P* **29** *L* **12** # r01-43

RAN, ADEE — Intel Corporation

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

The words "and Clause 145" are new.

*SuggestedRemedy*

Apply underline format.

*Proposed Response* *Response Status* **O**

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*Cl* **30** *SC* **30.9.1.1.5b** *P* **40** *L* **28** # r01-44

RAN, ADEE — Intel Corporation

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

The last paragraph seems to be a NOTE as in 30.9.1.1.51.

*SuggestedRemedy*

Change to NOTE paragraph format or insert "NOTE--" at the beginning of this paragraph.

*Proposed Response* *Response Status* **O**

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*Cl* **33** *SC* **33.4.9.1** *P* **69** *L* **31** # r01-45

RAN, ADEE — Intel Corporation

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

Per the style manual "In general text, isolated numbers less than 10 should be spelled out".

*SuggestedRemedy*

Change "5" to "five".

*Proposed Response* *Response Status* **O**

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*Cl* **79** *SC* **79.3.2** *P* **80** *L* **51** # r01-46

RAN, ADEE — Intel Corporation

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

LLDPDU is a field in the LLDP frame (see 79.1.1.4). LLDPDU does not have extension fields; it is the Power Via MDI TLV that may include them.

*SuggestedRemedy*

Change "in transmitted LLDPDU's" to "in the transmitted Power Via MDI TLV".

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.2** *P* **82** *L* **9** # r01-47
RAN, ADEE Intel Corporation

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

Number disagreement: "A Type 3 or Type 4 PSEs that is"

*SuggestedRemedy*

Change "PSEs" to "PSE".

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.2** *P* **82** *L* **11** # r01-48
RAN, ADEE Intel Corporation

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

It isn't clear what "can indicate" means here.
(Style manual: "can equals is able to")

*SuggestedRemedy*

Change "can indicate" to "indicates".

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.6c.1** *P* **87** *L* **34** # r01-49
RAN, ADEE Intel Corporation

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

Inconsistent quotes (here double, elsewhere single), and "field" should not be within the quotes.

Compared to 79.3.2.6: The 'PSE allocated power value' field

Also in 79.3.2.6c.2 and perhaps other places.

*SuggestedRemedy*

Change double quotes to single, and move the word "field" outside of the quotes, in multiple cases in 79.3.2.6c.1 and 79.3.2.6c.2.

Fix similar inconsistencies across this clause.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.4** *P* **117** *L* **6** # r01-50
RAN, ADEE Intel Corporation

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

"Alternatives A and Alternative B"

*SuggestedRemedy*

Change to "Alternative A and Alternative B".

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.5** *P* **185** *L* **43** # r01-51
RAN, ADEE Intel Corporation

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

Per the style manual, the use of the word will is deprecated.

Also in 145.3.8.10.

*SuggestedRemedy*

Change "the current will not equally divide" do "the current does not equally divide" or "the current may not equally divide".

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.2** *P* **197** *L* **53** # r01-52
RAN, ADEE Intel Corporation

*Comment Type* **G** *Comment Status* **X**

The NOTE seems to repeat (informatively) what the clause text above it is stating (normatively).

Saying that something is not allowed does not belong in an informative note.

*SuggestedRemedy*

Delete the note.

If it isn't clear that both Mode A and Mode B need to be supported, add a "shall" statement in the preceding paragraph.

*Proposed Response* *Response Status* **O**

*Cl* **1** *SC* **1.4.417** *P* **25** *L* **17** # r01-54

Agnes, Andrea STMicroelectronics

*Comment Type* **G** *Comment Status* **X**

The definition:
1.4.417 Type 2 PD: A PD that provides a Class 4 signature during Physical Layer classification, understands 2-Event classification, and is capable of Data Link Layer classification requests Class 4 during Physical Layer classification, supports Multiple-Event Classification, and supports Data Link Layer
classification (see IEEE 802.3, Clause 33).

uses a Multiple-Event Classification, but it is not defined in Clause 33.

*SuggestedRemedy*

Use the 2-Event Classification in the defintion as called in Clause 33. Then the definition became:

1.4.417 Type 2 PD: A PD that provides a Class 4 signature during Physical Layer classification, understands 2-Event classification, and is capable of Data Link Layer classification requests Class 4 during Physical Layer classification, supports 2-Event Classification, and supports Data Link Layer
classification (see IEEE 802.3, Clause 33).

*Proposed Response* *Response Status* **O**

*Cl* **1** *SC* **1.4.418ac** *P* **25** *L* **35** # r01-55

Agnes, Andrea STMicroelectronics

*Comment Type* **G** *Comment Status* **X**

Comment TYPE4
The definition:
1.4.418ac Type 4 PD: A PD that requests Class 7 or Class 8 during Physical Layer classification, implements Multiple-Event classification, is capable of Data Link Layer classification, and accepts power on both Modes simultaneously. (See IEEE 802.3, Clause 145).

doesn't include dual signature PDs because Class5 is requested

*SuggestedRemedy*

Change definition to:

1.4.418ac Type 4 PD: A single-signature PD that requests Class 7 or Class 8, or a dual-signature PD that requests Class 5 on at least one Mode during Physical Layer classification, implements Multiple-Event classification, is capable of Data Link Layer classification, and accepts power on both Modes simultaneously. (See IEEE 802.3, Clause 145).

*Proposed Response* *Response Status* **O**

*Cl* **1** *SC* **1.4.418aa** *P* **25** *L* **28** # r01-56

Agnes, Andrea STMicroelectronics

*Comment Type* **G** *Comment Status* **X**

Comment TYPE3 (only if Comment TYPE4 is accepted)
The definition:
1.4.418aa Type 3 PD: A PD that requests Class 1 to Class 6 during Physical Layer classification, implements
Multiple-Event classification, and accepts power on both Modes simultaneously. (See IEEE 802.3,
Clause 145).

*SuggestedRemedy*

Change definition to:

1.4.418aa Type 3 PD: A single-signature PD that requests Class 1 to Class 6, or a dual-signature PD that requests Class 1 to Class 4 on both Modes during Physical Layer classification, implements Multiple-Event classification, and accepts power on both Modes simultaneously. (See IEEE 802.3, Clause 145).

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.1** *P* **176** *L* **23** # r01-57

Agnes, Andrea STMicroelectronics

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

The information that a dual-signature PD is defined as Type4 althougt just one Mode requests Class5 is missing.

*SuggestedRemedy*

Add NOTE 3 after the table 145-19:

NOTE 3 - Type 4 dual-signature PDs request Class 5 on at least one pairset

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **118** *L* **42** # r01-58

Agnes, Andrea STMicroelectronics

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

alt_pwrd_sec has value TRUE also when power is applied (as alt_pwrd_pri)

*SuggestedRemedy*

Change the definition of TRUE:

TRUE: The PSE has detected, classified, and will power a PD on the Secondary Alternative, or is powering Secondary Alternative.

*Proposed Response* *Response Status* **O**

*Cl* **1** *SC* **1.4.338** *P* **24** *L* **40** # r01-60

Yseboodt, Lennart Philips Lighting

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

We pulled in the definition of PSE as modified by 802.3bu.
The term "DTE powering" is still used here, which we now refer to as Power over Ethernet.
To be consistent, we call it "Power over Data Lines" for Clause 104.
There also seems to be a repeat of a sentence in the definition.
Given the extensive changes, we should just replace the definition completely.

*SuggestedRemedy*

1. Change the editing instruction from "Change 1.4.338 (as modified by IEEE Std 802.3bu-2016) as follows:"
to "Replace 1.4.338 (incorporating the changes made by IEEE Std 802.3bu-2016) as follows:"

2. New text:
"1.4.338 Power Sourcing Equipment (PSE): A DTE or midspan device that provides the power to a single link section. PSEs are defined for use with two different types of balanced twisted-pair PHYs. When used with 2 or 4 pair balanced twisted-pair (BASE-T) PHYs, see IEEE Std 802.3, Clause 33 and Clause 145, Power over Ethernet is intended to provide a single 10BASE-T, 100BASE-TX, 1000BASE-T, 2.5GBASE-T, 5GBASE-T, or 10GBASE-T device with a unified interface for both the data it requires and the power to process these data. When used with single balanced twisted-pair (BASE-T1) PHYs (see IEEE Std 802.3, Clause 104), Power over Data Lines is intended to provide a single 100BASE-T1 or 1000BASE-T1 device with a unified interface for both the data it requires and the power to process these data. A PSE used with balanced single twisted-pair PHYs is also referred to as a PoDL PSE."

*Proposed Response* *Response Status* **O**

*Cl* **25** *SC* **25.4.5** *P* **29** *L* **12** # r01-61

Yseboodt, Lennart — Philips Lighting

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

"A 100BASE-TX transmitter in a Type 2, Type 3, or Type 4 Endpoint PSE or Type 2, Type 3, or Type 4 PD delivering or accepting more than 13.0 W average power shall meet either the Open Circuit Inductance (OCL) requirement in 9.1.7 of TP- PMD, or meet the requirements of 25.4.5.1."

The reference to 13.0 W is incorrect as the equivalent number on the PSE side is 15.4W. We really should be referring to Class here. But... do we mean assigned Class ? It would be strange that a data requirement depends on the assigned Class.
It seems this whole construction with "more than 13.0 W" was introduced not to add a requirement to Type 1.
Let's simplify.

*SuggestedRemedy*

- Change quoted sentence to read:
"A 100BASE-TX transmitter in a Type 2 Endpoint PSE or Type 2 PD delivering or accepting more than 13 W average power shall meet either the Open Circuit Inductance (OCL) requirement in 9.1.7 of TP- PMD, or meet the requirements of 25.4.5.1."

- Add new sentence:
"A 100BASE-TX transmitter in a Type 3 or Type 4 Endpoint PSE or Type 3 or Type 4 PD shall meet either the Open Circuit Inductance (OCL) requirement in 9.1.7 of TP- PMD, or meet the requirements of 25.4.5.1."

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1.5** *P* **36** *L* **31** # r01-62

Yseboodt, Lennart — Philips Lighting

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

"indicates that the PSE State diagram is in the state IDLE due to the variable error_condition = true."

Because this refers to a state diagram boolean variable, the convention is to capitalize TRUE.

*SuggestedRemedy*

Change true with TRUE.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1.5a** *P* **36** *L* **41** # r01-63

Yseboodt, Lennart — Philips Lighting

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

aPSEPowerDetectionStatusA:
"The enumeration "deliveringPowerAltA" indicates that the PSE State diagram is in the state POWER_ON_PRI. The enumeration "faultAltA" indicates that the PSE State diagram is in the state IDLE_PRI due to the variable error_condition_pri = true. The enumeration "searchingAltA" indicates the PSE State diagram is in a state other than those listed above.;"

Hard-links Alternative A to the Primary state diagram. Only has a 50% chance of being right.

*SuggestedRemedy*

Replace text by:
"The enumeration "deliveringPowerAltA" indicates that the PSE State diagram is in the state POWER_ON_PRI if alt_pri='a', or the state POWER_ON_SEC if alt_pri='b'. The enumeration "faultAltA" indicates that the PSE State diagram is in the state IDLE_PRI if alt_pri='a', or the state IDLE_SEC if alt_pri='b' due to the variable error_condition_pri = true (if alt_pri='a') or error_condition_sec = TRUE (if alt_pri='b'). The enumeration "searchingAltA" indicates the PSE State diagram is in a state other than those listed above.;"

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1.5b** *P* **37** *L* **10** # r01-64

Yseboodt, Lennart Philips Lighting

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

aPSEPowerDetectionStatusB:
"The enumeration "deliveringPowerAltB" indicates that the PSE State diagram is in the state POWER_ON_SEC. The enumeration "faultAltB" indicates that the PSE State diagram is in the state IDLE_SEC due to the variable error_condition_sec = true. The enumeration "searchingAltB" indicates the PSE State diagram is in a state other than those listed above.;"

Hard-links Alternative B to the Secondary state diagram. Only has a 50% chance of being right.

*SuggestedRemedy*

Replace text by:
"The enumeration "deliveringPowerAltB" indicates that the PSE State diagram is in the state POWER_ON_SEC if alt_pri='a', or the state POWER_ON_PRI if alt_pri='b'. The enumeration "faultAltB" indicates that the PSE State diagram is in the state IDLE_SEC if alt_pri='a', or the state IDLE_PRI if alt_pri='b' due to the variable error_condition_sec = true (if alt_pri='a') or error_condition_pri = TRUE (if alt_pri='b'). The enumeration "searchingAltB" indicates the PSE State diagram is in a state other than those listed above.;"

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1.7** *P* **38** *L* **9** # r01-65

Yseboodt, Lennart Philips Lighting

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

"This counter is incremented when the Type 1 and Type 2 PSE state diagram (Figure 33-9 and
Figure 145-13) enters the state SIGNATURE_INVALID."
The reference Figure 145-13 does not belong with a Type1 or 2 PSE.

*SuggestedRemedy*

Remove "and Figure 145-13".

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1.7a** *P* **38** *L* **15** # r01-66

Yseboodt, Lennart Philips Lighting

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

aPSEInvalidSignatureCounterA:
"This counter is incremented when the Type 3 and Type 4 PSE state diagram (Figure 145-15) enters the state IDLE_PRI due to sig_pri [?] valid.;"

Hard-links Alternative A to the Primary or Alternative B to the Secondary state diagram. Also, we current do not have a invalid signature counter for single-signature. Propose to repurpose aPSEInvalidSignatureCounterA to also serve single-signature.

*SuggestedRemedy*

Change to:
"This counter is incremented when the do_detect_pri or do_detect_sec function in Figure 145-13, Figure 145-15, and Figure 145-16, whichever corresponds to Alternative A depending on the value of alt_pri, returns 'invalid'.;"

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1.7b** *P* **38** *L* **27** # r01-67

Yseboodt, Lennart Philips Lighting

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

aPSEInvalidSignatureCounterB:
"This counter is incremented when the Type 3 and Type 4 PSE state diagram (Figure 145-16) enters the state IDLE_SEC due to sig_sec [?] valid.;"

Hard-links Alternative B to the Primary or Alternative B to the Secondary state diagram. Also, we current do not have a invalid signature counter for single-signature. Propose to repurpose aPSEInvalidSignatureCounterB to also serve single-signature.

*SuggestedRemedy*

Change to:
"This counter is incremented when the do_detect_pri or do_detect_sec function in Figure 145-13, Figure 145-15, and Figure 145-16, whichever corresponds to Alternative B depending on the value of alt_pri, returns 'invalid'.;"

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1.8a** *P* **38** *L* **52** # r01-68

Yseboodt, Lennart Philips Lighting

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

aPSEPowerDeniedCounterA:
"This counter is incremented when the PSE state diagram (Figure 145-15) enters the state POWER_DENIED_PRI.;"

Hard-links Alternative A to the Primary or Alternative B to the Secondary state diagram.

*SuggestedRemedy*

Change to:
"This counter is incremented when the PSE state diagram (Figure 145-15 or Figure 145-16) enters the state POWER_DENIED_PRI if alt_pri='a', or enters the state POWER_DENIED_SEC if alt_pri='b'.;"

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1.8b** *P* **39** *L* **9** # r01-69

Yseboodt, Lennart Philips Lighting

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

aPSEPowerDeniedCounterB:
"This counter is incremented when the PSE state diagram (Figure 145-16) enters the state POWER_DENIED_SEC.;"

Hard-links Alternative A to the Primary or Alternative B to the Secondary state diagram.

*SuggestedRemedy*

Change to:
"This counter is incremented when the PSE state diagram (Figure 145-15 or Figure 145-16) enters the state POWER_DENIED_SEC if alt_pri='a', or enters the state POWER_DENIED_PRI if alt_pri='b'.;"

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1.9a** *P* **39** *L* **35** # r01-70

Yseboodt, Lennart Philips Lighting

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

aPSEOverLoadCounterA:
"This counter is incremented when the PSE state diagram (Figure 145-15) enters the state ERROR_DELAY_PRI.;"

Hard-links Alternative A to the Primary or Alternative B to the Secondary state diagram.

*SuggestedRemedy*

Change to:
"This counter is incremented when the PSE state diagram (Figure 145-15 or Figure 145-16) enters the state ERROR_DELAY_PRI if alt_pri='a', or enters the state ERROR_DELAY_SEC if alt_pri='b'.;"

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1.9a** *P* **39** *L* **46** # r01-71

Yseboodt, Lennart Philips Lighting

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

This subclause (aPSEOverLoadCounterB) has the same number as 30.9.1.1.9a aPSEOverLoadCounterA and has a copy-paste mistake.

aPSEOverLoadCounterB:
"This counter is incremented when the PSE state diagram (Figure 145-16) enters the state ERROR_DELAY_PRI.;"

Hard-links Alternative A to the Primary or Alternative B to the Secondary state diagram.

*SuggestedRemedy*

Change to:
"This counter is incremented when the PSE state diagram (Figure 145-15 or Figure 145-16) enters the state ERROR_DELAY_SEC if alt_pri='a', or enters the state ERROR_DELAY_PRI if alt_pri='b'.;"

- Fix subclause numbering.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1.10a** *P* **40** *L* **23** # r01-72

Yseboodt, Lennart Philips Lighting

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

aPSEMPSAbsentCounterA:
"This counter is incremented when the PSE state diagram (Figure 145-15) transitions directly from the state POWER_ON_PRI to the state IDLE_PRI due to mpdo_timer_pri_done being asserted.;"

Hard-links Alternative A to the Primary or Alternative B to the Secondary state diagram.

*SuggestedRemedy*

Change to:
"This counter is incremented when the PSE state diagram (Figure 145-15 or Figure 145-16) transitions directly from the state POWER_ON_PRI to the state IDLE_PRI due to mpdo_timer_pri_done being asserted if alt_pri='a', or, transitions directly from the state POWER_ON_SEC to the state IDLE_SEC due to mpdo_timer_sec_done being asserted if alt_pri='b'.;"

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1.10b** *P* **40** *L* **34** # r01-73

Yseboodt, Lennart Philips Lighting

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

aPSEMPSAbsentCounterB:
"This counter is incremented when the PSE state diagram (Figure 145-16) transitions directly from the state POWER_ON_SEC to the state IDLE_SEC due to tmpdo_timer_sec_done being asserted.;"

Hard-links Alternative A to the Primary or Alternative B to the Secondary state diagram.

*SuggestedRemedy*

Change to:
"This counter is incremented when the PSE state diagram (Figure 145-15 or Figure 145-16) transitions directly from the state POWER_ON_SEC to the state IDLE_SEC due to tmpdo_timer_sec_done being asserted, if alt_pri='a', or, transitions directly from the state POWER_ON_PRI to the state IDLE_PRI due to tmpdo_timer_pri_done being asserted, if alt_pri='b'.;"

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.2.1.10** *P* **42** *L* **13** # r01-74

Yseboodt, Lennart Philips Lighting

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

aLldpXdot3LocPowerClass:: "A read-only value that indicates the PD Class of the detected PD as specified in 33.2.6."

Is also defined in 145.2.7.
It is unclear from this text if this is the requested or assigned Class.
From reading 33.2.6 I gather it was intended as the requested Class.
This is tricky because "requested Class" is not a concept known in Clause 33.

*SuggestedRemedy*

Change to:
"A read-only value that indicates the PD Class of the detected PD as specified in 33.2.6 and 145.2.7. Type 3 and Type 4 devices use the PD requested Class as the value."
Make same change in 30.12.3.1.10

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.2.1.14** *P* **42** *L* **30** # r01-75

Yseboodt, Lennart Philips Lighting

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

aLldpXdot3LocPowerType::
"The second bit indicates PSE or PD. A PSE shall set this bit to indicate a PSE. A PD shall set this bit to indicate a PD."

Why do we have 'shalls' on PSEs and PDs in Clause 30 ? That is to be handled by Clause 33/145 or Clause 79, not here. Clause 79 already has a shall for this.

*SuggestedRemedy*

Strike last two sentences in quoted text.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.2.1.17** *P* **42** *L* **43** # r01-76

Yseboodt, Lennart — Philips Lighting

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

"PD requested power value is the maximum input average power the PD ever draws under this power allocation if accepted."

Missing determiner.

*SuggestedRemedy*

Replace by:
"The PD requested power value is the maximum input average power the PD ever draws under this power allocation if accepted."

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.2.1.18** *P* **43** *L* **8** # r01-77

Yseboodt, Lennart — Philips Lighting

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

"This is the PSE allocated power value that was used by the PD to compute the power that it has currently requested from the remote system."

The PDs power request value is a function of the amount of power it needs. The quoted statement is incorrect.

*SuggestedRemedy*

Strike sentence.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.2.1.18a** *P* **43** *L* **15** # r01-78

Yseboodt, Lennart — Philips Lighting

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

aLldpXdot3LocReadyA and aLldpXdot3LocReadyB were the objects for the independent pse_dll_ready_alt(X) and pd_dll_ready_mode(X).
Those variables no longer exist and are no longer needed.

*SuggestedRemedy*

Remove in the entire draft aLldpXdot3LocReadyA and aLldpXdot3LocReadyB (Clause 30, Clause 79, Clause 145).

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.2.1.18c** *P* **43** *L* **49** # r01-79

Yseboodt, Lennart — Philips Lighting

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

aLldpXdot3LocPDRequestedPowerValueA is 30.12.2.1.18c.
It makes more sense to put these after 30.12.2.1.17 aLldpXdot3LocPDRequestedPowerValue.

*SuggestedRemedy*

Move 30.12.2.1.18c aLldpXdot3LocPDRequestedPowerValueA and 30.12.2.1.18d aLldpXdot3LocPDRequestedPowerValueB to after 30.12.2.1.17 aLldpXdot3LocPDRequestedPowerValue.
Do the same for the remove variants.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.2.1** *P* **44** *L* **42** # r01-80

Yseboodt, Lennart — Philips Lighting

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

There are no Clause 30 objects for 'PSE powering status' and 'PD powering status' as defined in Table 79-6c.

*SuggestedRemedy*

Editor to create objects with appropriate content.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.2.1.18g** *P* **44** *L* **44** # r01-81

Yseboodt, Lennart — Philips Lighting

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

"APPROPRIATE SYNTAX: The same as used for aPSEPowerPairsExt"

Referenced object does not exist.

*SuggestedRemedy*

Copy APPROPRIATE SYNTAX from aPSEPowerPairs to here, however remove the line with "both" as this is not supported by Table 79-3a.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.2.1.18g** *P* **44** *L* **51** # r01-82

Yseboodt, Lennart Philips Lighting

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

"For a PSE this attribute contains the value of the aPSEPowerPairsExt attribute (see 30.9.1.1.4), for a PD the contents of this attribute are undefined.;"

That should be the aPSEPowerPairs attribute.

*SuggestedRemedy*

Change aPSEPowerPairsExt to aPSEPowerPairs

*Proposed Response* *Response Status* **O**

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*Cl* **30** *SC* **30.12.2.1.18h** *P* **45** *L* **6** # r01-83

Yseboodt, Lennart Philips Lighting

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

aLldpXdot3LocDualSigPowerClassExtModeA is missing an enumerated value to indicate 'single-signature'.

*SuggestedRemedy*

Add value "singlesig :: Single-signature PD" to aLldpXdot3LocDualSigPowerClassExtModeA, aLldpXdot3LocDualSigPowerClassExtModeB and their remote counterparts.

*Proposed Response* *Response Status* **O**

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*Cl* **30** *SC* **30.12.2.1.18j** *P* **45** *L* **37** # r01-84

Yseboodt, Lennart Philips Lighting

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

30.12.2.1.18j aLldpXdot3LocPDLoad is at wrong location.

*SuggestedRemedy*

Move 30.12.2.1.18j aLldpXdot3LocPDLoad to just after aLldpXdot3LocPowerTypeExt.

*Proposed Response* *Response Status* **O**

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*Cl* **30** *SC* **30.12.2.1.18k** *P* **45** *L* **48** # r01-85

Yseboodt, Lennart Philips Lighting

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

Objects aLldpXdot3LocPowerClassExtA and aLldpXdot3LocPowerClassExtB seems to be junk-remnants... there is no corresponding Clause 79 field.

*SuggestedRemedy*

Delete aLldpXdot3LocPowerClassExtA, aLldpXdot3LocPowerClassExtB, aLldpXdot3RemPowerClassExtA, aLldpXdot3RemPowerClassExtA throughout the draft.

*Proposed Response* *Response Status* **O**

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*Cl* **30** *SC* **30.12.2.1.18m** *P* **46** *L* **17** # r01-86

Yseboodt, Lennart Philips Lighting

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

aLldpXdot3LocPowerClassExt
- The enumerated values only list PSE and PD... when they should list the possible Classes.
- The descriptive text is incomplete.

*SuggestedRemedy*

- Replace the ENUMERATED VALUEs by:
 * dualsig :: Dual-signature PD
 * class8 :: Class 8
 * class7 :: Class 7
 * class6 :: Class 6
 * class5 :: Class 5
 * class4 :: Class 4
 * class3 :: Class 3
 * class2 :: Class 2
 * class1 :: Class 1

- Replace the "BEHAVIOUR DEFINED AS:" by:
"For a single-signature PD, a read-only value that indicates the requested Class during Physical Layer Classification (see 145.3.6). For a dual-signature PD, a read-only value set to 'dualsig'.
For a PSE connected to a single-signature PD, a read-only value that indicates the currently assigned Class (see 145.2.7). For a PSE connected to a dual-signature PD, a read-only value set to 'dualsig'."

- Change the "BEHAVIOUR DEFINED AS:" for aLldpXdot3LocDualSigPowerClassExtModeA and aLldpXdot3LocDualSigPowerClassExtModeB to follow the style above.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.2.1.18n** *P* **46** *L* **31** # r01-87

Yseboodt, Lennart Philips Lighting

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

Enumerated values of aLldpXdot3LocPowerTypeExt are confusing.

*SuggestedRemedy*

- Change type4dualPD to type4dualsigPD.
- Change type4singlePD to type4singlesigPD.
- Change type3dualPD to type3dualsigPD.
- Change type3singlePD to type3singlesigPD.

Make same fixes for the remote.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.2.1.18t** *P* **47** *L* **51** # r01-88

Yseboodt, Lennart Philips Lighting

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

aLldpXdot3LocPowerDownRequest is a BIT STRING of size 6, but it is used as a numeric value.

*SuggestedRemedy*

Change to INTEGER. Also change the remote.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.2.1** *P* **49** *L* **29** # r01-89

Yseboodt, Lennart Philips Lighting

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

Subclause numbering after 30.12.2.1.18ab has gone wrong.

*SuggestedRemedy*

Use proper subclause numbering.

[ ] Recheck this comment after implementing all Clause 30 changes.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.2.1.18ab15** *P* **52** *L* **9** # r01-90

Yseboodt, Lennart Philips Lighting

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

aLldpXdot3LocPSEPowerPriceIndex:: "A GET attribute that returns an index of the price of power.;"

Very terse, does not explain this is a PSE value only.

*SuggestedRemedy*

Replace by:
"A GET attribute that returns an index of the price of power being sourced by the PSE. For a PD this value is undefined.;"

Add same last sentence to the remote variant.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.3.1.14** *P* **53** *L* **25** # r01-91

Yseboodt, Lennart Philips Lighting

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

This subclause is not in the draft (ergo, unmodified).
Changes have been made to the 'local' version that need to be mirrored here.

*SuggestedRemedy*

Note: Existing text, **added text**, and XXremoved textXX.

- Bring 30.12.3.1.14 into the draft
- Change as BEHAVIOUR as follows:

A GET attribute that returns a bit string indicating whether the remote system is a PSE or a PD and whether it is Type 1 or XXType 2XX **greater than Type 1**.

The first bit indicates Type 1 or XXType 2XX **greater than Type 1**. The second bit indicates PSE or PD. **See also aLldpXdot3RemPowerTypeExt**;

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.3.1.18** *P* **53** *L* **38** # r01-92

Yseboodt, Lennart Philips Lighting

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

The definition of aLldpXdot3RemPSEAllocatedPowerValue (currently not in the draft) no longer matches with changes made to the local variant.

*SuggestedRemedy*

Bring 30.12.3.1.18 into the draft and change BEHAVIOUR follows:
A GET attribute that returns the PSE allocated power value received from the remote system. For a PSE, it is the PSE allocated power value that XXwas used by the remote system to compute the power value that it has currently requested from the PSEXX **was mirrored back by the remote PD**. For a PD, it is the PSE allocated power value received from the remote system. The definition and encoding of PSE allocated power value is the same as described in aLldpXdot3LocPSEAllocatedPowerValue (30.12.2.1.18).;

Make similar change to aLldpXdot3RemPSEAllocatedPowerValueA and aLldpXdot3RemPSEAllocatedPowerValueB.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.3.1.18e** *P* **54** *L* **50** # r01-93

Yseboodt, Lennart Philips Lighting

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

"For a PSE this attribute contains the value of the aPSEPowerPairsExt attribute (see 30.9.1.1.3), for a PD the contents of this attribute are undefined.;"

1. aPSEPowerPairsExt should be aPSEPowerPairs
2. Wrong reference

*SuggestedRemedy*

- Replace aPSEPowerPairsExt with aPSEPowerPairs
- Change 30.9.1.1.3 to 30.9.1.1.4

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.3.1.18k** *P* **56** *L* **17** # r01-94

Yseboodt, Lennart Philips Lighting

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

aLldpXdot3RemPowerClassExt
- The enumerated values only list PSE and PD... when they should list the possible Classes.
- The descriptive text is incomplete.

*SuggestedRemedy*

- Replace the ENUMERATED VALUEs by:
 * dualsig :: Dual-signature PD
 * class8 :: Class 8
 * class7 :: Class 7
 * class6 :: Class 6
 * class5 :: Class 5
 * class4 :: Class 4
 * class3 :: Class 3
 * class2 :: Class 2
 * class1 :: Class 1

- Replace the "BEHAVIOUR DEFINED AS:" by:
"For a single-signature PD, a read-only value that indicates the currently assigned Class by the remote PSE. For a dual-signature PD, a read-only value set to 'dualsig' by the remote PSE.
For a PSE connected to a single-signature PD, a read-only value that indicates the requested Class during Physical Layer classification (see 145.2.7) by the remote PD.
For a PSE connected to a dual-signature PD, a read-only value set to 'dualsig' by the remote PD."

- Change the "BEHAVIOUR DEFINED AS:" for aLldpXdot3RemDualSigPowerClassExtModeA and aLldpXdot3RemDualSigPowerClassExtModeB to follow the style above.

*Proposed Response* *Response Status* **O**

*Cl* **33** *SC* **33.4.9.3.2** *P* **72** *L* **54** # r01-95

Yseboodt, Lennart Philips Lighting

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

"For other than 5GBASE-T or 10GBASE-T opera- tion, PSAFEXT loss for Midspan PSE devices shall meet the values determined by Table 33-20b from 1 MHz to 100 MHz.
For 5GBASE-T capable midspans, PSAFEXT loss for Midspan PSE devices shall meet the values determined by Table 33-20b from 1 MHz to 250 MHz.
For 10GBASE-T capable midspans, PSAFEXT loss for Midspan PSE devices shall meet the values determined by Table 33-20b from 1 MHz to 500 MHz."

That should probably refer to Table 33-20c.
George ?

*SuggestedRemedy*

Change Table 33-20b to Table 33-20c. (3x)

*Proposed Response* *Response Status* **O**

*Cl* **33** *SC* **33.4.9.3.2** *P* **73** *L* **3** # r01-96

Yseboodt, Lennart Philips Lighting

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

"from 1 MHz to 500 MHz.Calculations"

Missing space.

*SuggestedRemedy*

Add space.

*Proposed Response* *Response Status* **O**

*Cl* **33** *SC* **33.6.3.3** *P* **73** *L* **19** # r01-97

Yseboodt, Lennart Philips Lighting

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

In 802.3-2015, in Clause 79, the permitted value range for the PD requested power and PSE allocated power value fields ranged 1 to 255.
By mistake, in Clause 33 the permitted range started at zero.
The value of zero is undefined in DLL.

In 802.3bt we are changing Clause 79 to permit value zero, this is required to support dual-signature power negotiation.
However that, in combination with the current value ranges in 33.6.3.3 makes zero a legal value for legacy devices.
Since this is undefined, we must prevent this.
The proposed solution is to restrict the value range in 33.6.3.3.
In summary, we are moving a restriction from Clause 79 to 33.6.3.3, the net result is an identical permitted value range for legacy devices.

A supporting MR has been filed for this comment.

*SuggestedRemedy*

In subclause 33.6.3.3 (variables, DLL classification), change the "Values:0 through 255" to "Values 1 through 255" for the following:
- MirroredPDRequestedPowerValue
- MirroredPSEAllocatedPowerValue
- PDRequestedPowerValueEcho
- PDRequestedPowerValue (here change to "0 through PD_DLLMAX_VALUE")
- PSEAllocatedPowerValue
- PSEAllocatedPowerValueEcho

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2** *P* **80** *L* **14** # r01-98

Yseboodt, Lennart Philips Lighting

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

"Power entities may continue to use the Power Via MDI TLV basic fields shown in Figure 79-3 prior to supplying/drawing power to/from the Power Interface (PI)."

This is the first mention of PI in Clause 79. Refer to definitions.

*SuggestedRemedy*

Change to:
"Power entities may continue to use the Power Via MDI TLV basic fields shown in Figure 79-3 prior to supplying/drawing power to/from the Power Interface (PI), as defined in 1.4.337."

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2** *P* **80** *L* **36** # r01-99

Yseboodt, Lennart Philips Lighting

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

Figure 79-3 shows a "Power down" field.
Field name is different all over Clause 79.

Replace all by "Power down"

*SuggestedRemedy*

- page 89, line 41: Change subclause title to "Power down"
- page 89, line 42: Change "request power down" to "Power down request"
- page 90, line 12: Table 79-6g title => "Power down field"

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.1** *P* **81** *L* **1** # r01-100

Yseboodt, Lennart Philips Lighting

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

Editor to consistently put single quotes around field names.
Eg. The 'Port class' field.

*SuggestedRemedy*

To implement throughout Clause 79.

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.1** *P* **81** *L* **6** # r01-101

Yseboodt, Lennart Philips Lighting

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

Table 79-3 "MDI power capabilities/status" does match with Figure 79-3 nor with subclause title which is "MDI power support".

*SuggestedRemedy*

Change Table title to "MDI power support field".

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.1** *P* **81** *L* **8** # r01-102

Yseboodt, Lennart Philips Lighting

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

Table 79-3, unlike every other Table in Clause 79, lists the bits starting with the LSB.
The Title of the table does not end in 'field'.

*SuggestedRemedy*

- Reverse the order of the rows in Table 79-3
- Append 'field' to Table title

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.3** *P* **82** *L* **32** # r01-103

Yseboodt, Lennart Philips Lighting

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

"The 'power class' field transmitted by a PSE shall contain an integer value as defined in Table 79-3b based on aPSEPowerClassification. Class 4 and above is indicated with the same value in this field. Class 5 and above is communicated by the 'Power Class ext' field defined in 79.3.2.6c.6."
Capitalize field name.

*SuggestedRemedy*

"The 'Power class' field transmitted by a PSE shall contain an integer value as defined in Table 79-3b based on aPSEPowerClassification. Class 4 and above is indicated with the same value in this field. Class 5 and above is communicated by the 'Power Class ext' field defined in 79.3.2.6c.6."

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.4** *P* **83** *L* **3** # r01-104

Yseboodt, Lennart Philips Lighting

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

"The power type/source/priority field shall contain a bit-map of the power type, source and priority defined in Table 79-4 and is reported for the device generating the TLV."
Quotes around fieldname and capitalize first letter of field.

*SuggestedRemedy*

"The 'Power type/source/priority' field shall contain a bit-map of the power type, source and priority defined in Table 79-4 and is reported for the device generating the TLV."

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.4** *P* **83** *L* **12** # r01-105

Yseboodt, Lennart Philips Lighting

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

Names in column "Function" should all start with a capital letter.

*SuggestedRemedy*

Change names by capitalize first letter and update usage in Clause 79.

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.61** *P* **85** *L* **1** # r01-106

Yseboodt, Lennart Philips Lighting

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

"Table 79-6a--PD requested power value for Mode A field" does not match with field title in Figure 79-3. Strike 'for'.

*SuggestedRemedy*

Change to "Table 79-6a--PD requested power value Mode A field"
And do the same for Mode B.

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.6c** *P* **85** *L* **44** # r01-107

Yseboodt, Lennart Philips Lighting

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

"The 'power status' field shall contain the PSE's bit-map of the PSE power pair and PSE or PD power class,defined in Table 79-6c, and is reported for the device generating the TLV."
Capitalize field name.

*SuggestedRemedy*

Change to:
"The 'Power status' field shall contain the PSE's bit-map of the PSE power pair and PSE or PD power class,defined in Table 79-6c, and is reported for the device generating the TLV."

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.6c.1** *P* **86** *L* **13** # r01-108

Yseboodt, Lennart Philips Lighting

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

Table 79-6c, bit 13:12 "powered single-signature PD"

*SuggestedRemedy*

Capitalize.

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.6c.1** *P* **86** *L* **50** # r01-109

Yseboodt, Lennart Philips Lighting

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

Table 79-6c, Power status field, item 'Power Class ext' contains a value for Class 0.
This class is not requested or assigned by Type 3/4 devices.

*SuggestedRemedy*

Replace by "0 0 0 0 = Reserved/Ignore"

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.6c.4** *P* **87** *L* **15** # r01-110

Yseboodt, Lennart Philips Lighting

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

"When the 'power type ext' field indicates a PD the 'dual-signature power Class ext Mode A' field shall be set to the requested Class of
the dual-signature PD for Mode A during Physical Layer Classification as defined in 145.3.6.
When the 'power type ext' field indicates a PSE and the PSE is connected to a dual-signature PD, the 'dual-signature power Class ext Mode A' field
shall be set to the PSEs assigned Class for Alternative A as defined in 145.2.7."

Field names should start with capital first letter.

*SuggestedRemedy*

Change to:
"When the 'Power Type ext' field indicates a PD the 'Dual-signature power Class ext Mode A' field shall be set to the requested Class of
the dual-signature PD for Mode A during Physical Layer Classification as defined in 145.3.6.
When the 'Power Type ext' field indicates a PSE and the PSE is connected to a dual-signature PD, the 'Dual-signature power Class ext Mode A' field
shall be set to the PSEs assigned Class for Alternative A as defined in 145.2.7."

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.6c.4** *P* **87** *L* **19** # r01-111

Yseboodt, Lennart Philips Lighting

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

"PSEs connected to a Type 1, Type 2 or single-signature PD set this field to value 7."

The PSE is not always able to distinguish the Type of the PD (for Class <= 4).
There is also the open issue of Type 3 PSEs that are 2P only... how are they to set this field ?

This also should be a requirement.

*SuggestedRemedy*

"PSEs connected to a single-signature PD, or Type 3 PSEs that operate only in 2-pair mode, shall set this field to value 7."

- Do the same for 79.3.2.6c.5

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.6c.5** *P* **87** *L* **24** # r01-112

Yseboodt, Lennart Philips Lighting

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

"When the 'power type ext' field indicates a PD the 'dual-signature power Class ext Mode B' field shall be set to the requested Class
of the dual-signature PD for Mode B during Physical Layer Classification as defined in 145.3.6.
When the 'power type ext' field indciates a PSE and the PSE is connected to a dual-signature PD, the 'dual-signature power Class ext Mode B' field
shall be set to the PSEs assigned Class for Alternative B as defined in 145.2.7."

Field names should start with capital first letter.

*SuggestedRemedy*

Change to:
"When the 'Power Type ext' field indicates a PD the 'Dual-signature power Class ext Mode B' field shall be set to the requested Class
of the dual-signature PD for Mode B during Physical Layer Classification as defined in 145.3.6.
When the 'Power Type ext' field indciates a PSE and the PSE is connected to a dual-signature PD, the 'Dual-signature power Class ext Mode B' field
shall be set to the PSEs assigned Class for Alternative B as defined in 145.2.7."

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.6c.6** *P* **87** *L* **33** # r01-113

Yseboodt, Lennart — Philips Lighting

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

"When the 'power type ext' field indicates a PD for a single-signature PD or Type 1 and Type 2 PD the
'power Class ext' field shall be set to the requested Class of the PD during Physical Layer Classification as
defined in 145.3.6. When the power type is PSE, the 'power Class ext' field shall be set to the PSEs assigned
Class as defined in 145.2.7. PSEs connected to a dual-signature PD and dual-signature PDs set the 'power
Class ext' field to the power class indicated by the total power indicated by 'power Class ext Mode A' field
and 'power Class ext Mode B' field."

Field names should start with capital first letter.

*SuggestedRemedy*

Change to:
"When the 'Power Type ext' field indicates a PD for a single-signature PD or Type 1 and Type 2 PD the
'Power Class ext' field shall be set to the requested Class of the PD during Physical Layer Classification as
defined in 145.3.6. When the power type is PSE, the 'Power Class ext' field shall be set to the PSEs assigned
Class as defined in 145.2.7. PSEs connected to a dual-signature PD and dual-signature PDs set the 'Power
Class ext' field to the power class indicated by the total power indicated by 'Power Class ext Mode A' field
and 'Power Class ext Mode B' field."

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.6d** *P* **87** *L* **33** # r01-114

Yseboodt, Lennart — Philips Lighting

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

"The 'system setup' field shall contain the device bit-map of the Power type ext, PD 4PID, and PD Load
defined in Table 79-6d and is reported for the device generating the TLV. The value of the 'system setup'
field transmitted by a PSE is undefined."

Field names should start with capital first letter.

*SuggestedRemedy*

Change to:
"The 'System setup' field shall contain the device bit-map of the Power Type ext, PD 4PID, and PD Load
defined in Table 79-6d and is reported for the device generating the TLV. The value of the 'System setup'
field transmitted by a PSE is undefined."

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.6d** *P* **87** *L* **33** # r01-115

Yseboodt, Lennart — Philips Lighting

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

"This field shall be set to '0' when the power type is PSE. This field shall be set to '1' when the 'power type ext' is Type 3 PD or Type 4 PD."

Field names should start with capital first letter.

*SuggestedRemedy*

Change to:
"This field shall be set to '0' when the power type is PSE. This field shall be set to '1' when the 'Power Type ext' is Type 3 PD or Type 4 PD."

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.6d.2** *P* **87** *L* **50** # r01-116

Yseboodt, Lennart Philips Lighting

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

We have moved the PD 4PID bit from the System setup field to Power type/source/priority field, but failed to move the descriptive subclause with it.
Also the text in that subclause needs to be updated.

Note that we no longer need a 'shall' for Type 3/4 PDs, because that is now handled by the DLL power control state diagrams.

*SuggestedRemedy*

- Delete subclause 79.3.2.6d.2
- Add new subclause under 79.3.2.4 title "PD 4PID" with content:

This field shall be set according to Table 79-4 when the power type is PD to indicate wether the PD support powering of both Modes simultaneously.
This field shall be set to '0' when the power type is PSE.

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.6d** *P* **88** *L* **1** # r01-117

Yseboodt, Lennart Philips Lighting

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

"Power type ext" we should capitalize Type to be consistent with the rest of the draft.

*SuggestedRemedy*

Rename field to "Power Type ext"

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.6d** *P* **88** *L* **1** # r01-118

Yseboodt, Lennart Philips Lighting

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

In Table 79-6d the Power Type ext field describes the Type of the PSE or PD.
This still includes entries for Type 1 / Type 2, which no longer makes sense given that they are barred from sending the T3/4 extension fields.

*SuggestedRemedy*

- Reduce field to 3 bits with following content:
111 Reserved / Ignore
110 Type 4 dual-signature PD
101 Type 4 single-signature PD
011 Type 3 dual-signature PD
010 Type 3 single-signature PD
001 Type 4 PSE
000 Type 3 PSE

- Move the reserved bit on bit position 1 to the top (which now has bits 7:4 as Reserved)

- Update Clause 30 enumeration to match

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.6f.1** *P* **89** *L* **25** # r01-119

Yseboodt, Lennart Philips Lighting

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

"When the power type is PSE this field shall be set to indicate if the PSE supports Autoclass over DLL
according to Table 79-6f. When the power type is PD this field shall be set to 0."

Field names should start with capital first letter.

*SuggestedRemedy*

Change to:
"When the Power Type is PSE this field shall be set to indicate if the PSE supports Autoclass over DLL
according to Table 79-6f. When the Power Type is PD this field shall be set to 0."

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.6f.2** *P* **89** *L* **30** # r01-120

Yseboodt, Lennart Philips Lighting

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

"When the power type is PSE this field shall be set to indicate that the PSE has concluded the Autoclass measurement.
This happens after a request for Autoclass is made by the PD using the "Autoclass request" field defined in Table 79-6f.
When the power type is PD this field shall be set to 0."

Field names should start with capital first letter.

*SuggestedRemedy*

Change to:
"When the Power Type is PSE this field shall be set to indicate that the PSE has concluded the Autoclass measurement.
This happens after a request for Autoclass is made by the PD using the "Autoclass request" field defined in Table 79-6f.
When the Power Type is PD this field shall be set to 0."

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.6f.2** *P* **89** *L* **30** # r01-121

Yseboodt, Lennart Philips Lighting

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

"The 'request power down' field shall be set as defined in Table 79-6g. by a PD that no longer requires power from the PI."
Incorrect field name

*SuggestedRemedy*

Change to:
"The 'Power down request' field shall be set as defined in Table 79-6g. by a PD that no longer requires power from the PI."

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.8.1** *P* **92** *L* **26** # r01-122

Yseboodt, Lennart Philips Lighting

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

The energy measurement field in Table 79-7b does not contain a 'valid values' range.

*SuggestedRemedy*

Add to 'Energy measurement':
"Valid values are 0 through 4294967295."

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.8.2** *P* **92** *L* **33** # r01-123

Yseboodt, Lennart Philips Lighting

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

"The PSE power price index field shall contain a linear index of the current value of electricity within the PSE. This is a 15 bit unsigned integer in the range 0 through 32767, as defined in Table 79-7d. The PSE shall set the value of this field taking the availability of power from any external and internal resources, and the relative supply and demand balance, into account. A value of zero means that no power price index is available. The meaning of this field is implementation dependent."

Contradicts itself: it needs to be both a linear index, but it's also implementation dependent.

As currently specified this isn't terribly useful. We should come up with a specification.

*SuggestedRemedy*

Adopt yseboodt_01_1117_powerpriceindex.pdf

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.4.2** *P* **95** *L* **13** # r01-124

Yseboodt, Lennart Philips Lighting

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

In Table 79-9 and 79-10 in the column "TLV variable" the variable "PSE power pairx" is used , this has been renamed.

*SuggestedRemedy*

Change variable name to:
"PSE power pairs ext"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145** *P* **103** *L* **1** # r01-125

Yseboodt, Lennart — Philips Lighting

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

We have inconsistent capitalization for "Physical Layer [C/c]lassification".

For 802.3-2015_SECTION2
without capital c: 3 occurances
with capitcal C: 47 occurences

In our draft:
without capital c: 14 occurances
with capitcal C: 47 occurences

*SuggestedRemedy*

- Replace throughout the draft "Physical Layer Classification" with "Physical Layer classification".
- Decapitalize "Classification" whereever it should not be capitalized (whole draft)

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.1** *P* **103** *L* **9** # r01-126

Yseboodt, Lennart — Philips Lighting

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

"This clause defines the functional and electrical characteristics for providing an enhancement of the Power over Ethernet (PoE) system defined in Clause 33."

Comment i-43 (AIP) was lost due to adopting Thompson_01_0917.rtf.
Makes it seem that Clause 145 is an 'add-on' to Clause 33. It isn't, it is a complete, standalone PoE Clause.

*SuggestedRemedy*

Change to (remedy taken from response in i-43):
"This clause defines the functional and electrical characteristics of an enhanced Power over Ethernet (PoE) system. The original PoE system is defined in Clause 33."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.1** *P* **103** *L* **16** # r01-127

Yseboodt, Lennart — Philips Lighting

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

"The cabling portion of the system is defined as the Link Section."

No need for capitals in Link Section.

*SuggestedRemedy*

Decapitalize.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.1** *P* **103** *L* **22** # r01-128

Yseboodt, Lennart — Philips Lighting

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

"Those MAUs are defined Clause 14 and the PHYs defined in Clause 25, Clause 40, Clause 55, and Clause 126."

Not English.

*SuggestedRemedy*

Change as follows:
"Those MAUs are defined **in** Clause 14 and the PHYs **are** defined in Clause 25, Clause 40, Clause 55, and Clause 126."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.1** *P* **103** *L* **24** # r01-129

Yseboodt, Lennart — Philips Lighting

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

"The PSE and PD allow devices to supply/use power using the same generic cabling as is used for data transmission."
The devices do not allow this, the standard does.

*SuggestedRemedy*

Change to:
"Power over Ethernet allows devices to supply/use power using the same generic cabling as is used for data transmission."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.1** *P* **103** *L* **32** # r01-130

Yseboodt, Lennart Philips Lighting

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

"Power over Ethernet is intended to provide a 10BASE-T, 100BASE-TX, 1000BASE-T, 2.5GBASE-T, 5GBASE-T, or 10GBASE-T device with a single cabling interface for both the data and power."

Strike 'the' before data.

*SuggestedRemedy*

Strike 'the' before data.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.1.3** *P* **105** *L* **31** # r01-131

Yseboodt, Lennart Philips Lighting

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

Table 145-1 lists the system parameters. The Nominal highest current per pair is derived from the PSE Type and the number of powered pairs.
As such, it would make sense to swap the order of those columns.

*SuggestedRemedy*

Swap position of columns 2 and 3 in Table 145-1.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.1.3** *P* **106** *L* **28** # r01-132

Yseboodt, Lennart Philips Lighting

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

TOPIC:SIGNATURE
These comments fix inconsistencies in the word 'signature'.
When referring to detection, we should talk about "PD detection signature".
When referring to signature configuration, we should either say "single-signature PD, dual-signature PD, or PD signature configuration".
The draft contains 12 instances of the ambiguous "PD signature".

"When connected to a dual- signature PD, when operating in 2-pair mode, or when the PD signature has not yet been identified, V PSE is measured between any positive conductor of the pairset and any negative conductor of the corresponding pairset, for the given Alternative."

*SuggestedRemedy*

"When connected to a dual- signature PD, when operating in 2-pair mode, or when the PD signature **configuration** not yet been identified, V PSE is measured between any positive conductor of the pairset and any negative conductor of the corresponding pairset, for the given Alternative."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.1.4** *P* **106** *L* **34** # r01-133

Yseboodt, Lennart Philips Lighting

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

"Type 3 and Type 4 operation requires Class D, or better, cabling as specified in ISO/IEC 11801:1995 with the additional requirement that the channel DC loop resistance is 25 Ohm or less."

Comment i-48 against D3.0 attempted to fix this, but misquoted the draft.
Redundant reference to Type.

*SuggestedRemedy*

Replace by:
"Class D, or better, cabling as specified in ISO/IEC 11801:1995 with the additional requirement that the channel DC loop resistance is 25 Ohm or less is required to support operation as specified in this Clause."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2** *P* **107** *L* **18** # r01-134

Yseboodt, Lennart Philips Lighting

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

"Additional electrical specifications that apply to the PSE are in 145.4."

*SuggestedRemedy*

"Additional electrical specifications that apply to the PSE are **specified** in 145.4."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.1** *P* **107** *L* **28** # r01-135

Yseboodt, Lennart Philips Lighting

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

"PSE Type is a constant."

False. A PSE could be reconfigured between Type 3 and Type 4 (if it meets all the requirements) when it is in the IDLE/DISABLED state.
Rather than open that can of worms, how about we just remove this text.
This is one of those sentences that causes more trouble than what it tried to solve.

*SuggestedRemedy*

Remove quoted sentence.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.1** *P* **107** *L* **30** # r01-136

Yseboodt, Lennart Philips Lighting

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

I lost count of how many times we have changed Table 145-2, and it is STILL wrong and confusing.

Issues:
- 'Supports 4-pair power' has entry 'Optional' and 'Yes' ==> this overlaps.
- "Range of maximum Class supported" ==> requires a PhD in subtle standards language to understand
- Every single one of the values for "Range of maximum Class supported" is wrong per the changes to D3.0

*SuggestedRemedy*

Will use column,row coordinates for changes, the heading row counts as row 0.
Change:
(2,1) replace "Optional" by "No"
(3,0) replace "Range of maximum Class supported" by "Highest Class supported"
(3,1) replace "Class 3 to 4" by "1 to 4"
(3,2) replace "Class 5 to 6" by "1 to 6"
(3,3) replace "Class 8" by "7 to 8"

Straddle columns with identical content where appropriate.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.4** *P* **115** *L* **5** # r01-137

Yseboodt, Lennart Philips Lighting

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

"... which for PSEs are called Alternatives A and Alternative B."

Typo and mirror use of 'named' as is done in the PD section.

*SuggestedRemedy*

"... which for PSEs are named Alternative A and Alternative B."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.1** *P* **116** *L* **26** # r01-138

Yseboodt, Lennart — Philips Lighting

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

TOPIC:SIGNATURE
These comments fix inconsistencies in the word 'signature'.
When referring to detection, we should talk about "PD detection signature".
When referring to signature configuration, we should either say "single-signature PD, dual-signature PD, or PD signature configuration".
The draft contains 12 instances of the ambiguous "PD signature".

"If a PSE performing detection using Alternative A detects an invalid signature, it should complete a second detection in less than T dbo after the beginning of the first detection attempt. This allows an Alternative A PSE to complete a successful detection cycle prior to an Alternative B PSE present on the same link section that may have caused the invalid signature."

*SuggestedRemedy*

Change as follows:
"If a PSE performing detection using Alternative A detects an invalid **detection** signature, it should complete a second detection in less than T dbo after the beginning of the first detection attempt. This allows an Alternative A PSE to complete a successful detection cycle prior to an Alternative B PSE present on the same link section that may have caused the invalid **detection** signature."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.1** *P* **116** *L* **51** # r01-139

Yseboodt, Lennart — Philips Lighting

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

"Monitoring of inrush is described by the state diagram in Figure 145-19."
This sentence is to be removed when the inrush statediagrams are included in the top level PSE statediagram.

*SuggestedRemedy*

Remove this sentence when the inrush statediagrams are included in the top level PSE statediagram.
(Wait for other comment and revisit if adopted).

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.2** *P* **117** *L* **1** # r01-140

Yseboodt, Lennart — Philips Lighting

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

Our state diagrams are inordinately complex, with a very large number of variables (current count 163 for the PSE).
Given that our state diagrams mutated out of the Clause 33 state diagrams, we have low consistency in our variable descriptions.
Specifically, it is unclear what the rules are pertaining to each variable:
- may it be set externally ?
- only in IDLE, or at any time ?
- is it a state diagram internal variable ?
- is it a variable that must be set according to certain rules (eg. mps_valid) ?

The current descriptions don't help.
Some examples:
alt_done_pri: A variable used to coordinate... [this one is reserved for the state diagram]
alt_pri: A variable used to select... [this is a config variable]
alt_pwrd_pri: A variable that controls... [also reserved for the state diagram]
autoclass_enable: A control variable indicating... [configuration]
class_4PID_mult_events_pri: A variable indicating... [configuration]
det_once_sec: This variable indicates... [reserved for state diagram]
MirroredPDAutoclassRequest: A control variable output... [reserved for state diagram]
mps_valid: This variable indicates the presence or absence of a valid MPS... [mandatory set per requirements]

If we don't specify the 'usage rules' of variables, the state diagram can be made to do anything.

*SuggestedRemedy*

Adopt yseboodt_06_0117_variablerules.pdf

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.3** *P* **117** *L* **49** # r01-141

Yseboodt, Lennart — Philips Lighting

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

A bunch of descriptive text was added after CC_DET_SEQ:
"For a single-signature PD, parallel detection means that detection on both pairsets is done within the T det time period.
For a dual-signature PD, parallel detection means that detection on both pairsets is done within the same T det time period.
For a single-signature PD, staggered detection means that detection on both pairsets is done in different T det cycles.
For a dual-signature PD, parallel detection means that detection both pairsets is done in different T det cycles."

I feel this text adds more confusion / risk of contradiction than that it clarifies. Do we want to keep it ?

If yes, the following issues:
- last sentence seems to want to say 'staggered detection' rather than parallel detection.
- That means the definition for staggered detection is the same for single and dual is the same.
- Is there a difference between the first two sentences ? If yes... it feels like it should be reversed ?

Descriptive text like this does NOTHING technically.
If we're worried about 'parallel detection' being interpreted as the actual detection happining precisely at the same time, I would offer that a do_detection_xxx function is perfectly allowed to be called, and wait around doing nothing for a while, (eg. while the other function is doing it's thing), as long as it meets the Tdet timing.
In fact, as we discovered, the functions MUST be able to wait in order to correctly be able to use CC_DET_SEQ=2 where the two detection functions and the cxn function are called at the same time.

*SuggestedRemedy*

Option 1: remove quoted text.

Option 2: [my suggestion based on some guess work]
Replace by:
"Parallel detection refers to detection on both pairsets being performed in the same Tdet time period.
Staggered detection refers to detection on both pairsets being performed in a different Tdet cycle."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **118** *L* **31** # r01-142

Yseboodt, Lennart — Philips Lighting

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

COMMENT: ALT_PWRD
The TRUE definition of alt_pwrd_pri and alt_pwrd_sec is:
"The PSE has detected, classified, and will power a PD on the Primary Alternative, is powering the Primary Alternative."
and
"The PSE has detected, classified, and will power a PD on the Secondary Alternative."

Other comments fix the editorial issues with these sentences.

We discussed this at the last meeting and I feel we did not end up with a good solution.

The definition of variables should be restricted to what the variable does or represents. These variables' "TRUE" description includes behaviour that (should have) happened in the past, as well as making a forward looking statement.

If we look at how these variables are actually used, the definition really is very simple:

FALSE = The PSE is not to apply power to the XYZ Alternative.
TRUE = The PSE is to apply power to the XYZ Alternative.

*SuggestedRemedy*

Replace quoted sentences by:
"FALSE: The circuitry that applies operating voltage to the Primary Alternative is disabled."
and
"TRUE: The circuitry that applies operating voltage to the Primary Alternative is enabled."

And the same for Secondary.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **118** *L* **31** # r01-143

Yseboodt, Lennart Philips Lighting

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

Variable alt_pwrd_pri, TRUE:
"The PSE has detected, classified, and will power a PD on the Primary Alternative, is powering the Primary Alternative."

Missing 'or'.

*SuggestedRemedy*

"The PSE has detected, classified, and will power a PD on the Primary Alternative, **or** is powering the Primary Alternative."

Ignore if comment marked ALT_PWRD is accepted.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **118** *L* **34** # r01-144

Yseboodt, Lennart Philips Lighting

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

"A variable that indicates whether a 4-pair PSE has completed detection on a first Alternative but not on a second Alternative."

Description differs from how 'both_neither' and 'only_one' are described.

*SuggestedRemedy*

Change to:
"A variable that indicates whether a 4-pair PSE has completed detection on one and only one Alternative or on neither or both Alternatives."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **118** *L* **38** # r01-145

Yseboodt, Lennart Philips Lighting

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

Variable alt_pwrd_sec, TRUE:
"The PSE has detected, classified, and will power a PD on the Secondary Alternative."

Does not match Primary definition.

*SuggestedRemedy*

Replace by:
"The PSE has detected, classified, and will power a PD on the Primary Alternative, or is powering the Secondary Alternative."

Ignore if comment marked ALT_PWRD is accepted.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **118** *L* **38** # r01-146

Yseboodt, Lennart Philips Lighting

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

Variable alt_pwrd_sec, TRUE:
"The PSE has detected, classified, and will power a PD on the Secondary Alternative."

Missing the bit where it is already powering the Secondary.

*SuggestedRemedy*

"The PSE has detected, classified, and will power a PD on the Secondary Alternative**, or is powering the Secondary Alternative**."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **119** *L* **40** # r01-147

Yseboodt, Lennart Philips Lighting

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

"A variable indicating the state of the PD 4PID bit in the 'power type/source/priority field'"

Wrong field quotation.

*SuggestedRemedy*

Change to:
"A variable indicating the state of the PD 4PID bit in the 'Power type/source/priority' field"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **119** *L* **40** # r01-148

Yseboodt, Lennart — Philips Lighting

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

"dll_4PID A variable indicating the state of the PD 4PID bit in the 'power type/source/priority field', as defined in Table 79-4."

The values are described as:
"0: 2-pair power negotiated.
1: 4-pair power negotiated."

Issues:
1. The value description does not match the definition in Clause 79.
2. This variable does not have a mapping to aLldpXdot3LocPD4PID / aLldpXdot3RemPD4PID
3. It isn't being set properly by the DLL state diagrams (for Type 3/4 this variable must be set to True)
4. The value is an integer, but is used as a boolean in the PSE state diagram.

*SuggestedRemedy*

Do the following:
- Change values for dll_4PID as follows:
"FALSE: PD does not support powering of both Modes simultaneously
TRUE: PD supports powering of both Modes simultaneously"

- Add the following mappings to the (new) DLL mapping Tables:
PSE aLldpXdot3RemPD4PID => dll_4PID
PD aLldpXdot3LocPD4PID <= dll_4PID # Note: this entry to occur both in single and dualsig mapping table

- Add to INITIALIZE in Figure 145-41: "dll_4PID <= TRUE"
- Add to INITIALIZE in Figure 145-45 and 145-46: "dll_4PID <= TRUE"

- Add dll_4PID to the variable lists of the PD DLL control state diagrams

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **120** *L* **7** # r01-149

Yseboodt, Lennart — Philips Lighting

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

Variable error_condition_pri is listed twice (copy / paste mistake).

*SuggestedRemedy*

Change error_condition_pri on p120/line 7 to error_condition_sec

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **121** *L* **22** # r01-150

Yseboodt, Lennart — Philips Lighting

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

Variable option_2ev has incorrect formatting of the value descriptions (not aligned).

*SuggestedRemedy*

Fix.
Also same fix for:
- pd_req_pwr
- pse_allocated_pwr

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **121** *L* **28** # r01-151

Yseboodt, Lennart — Philips Lighting

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

option_class_probe: "This variable indicates if the PSE should determine the PD requested Class when pse_avail_pwr is less than 4. ..."

The state diagram will perform class probing when this option is set regardless of the value of pse_avail_pwr.
The actual behavior is further complicated by option_2ev and this variable being used for dual-signature.
Best way to fix this description is not to mention any conditions that don't really apply anyway.

*SuggestedRemedy*

Replace first sentence by:
"This variable indicates if the PSE should determine the PD requested Class via the do_class_probe function."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.6** *P* **121** *L* **53** # r01-152

Yseboodt, Lennart Philips Lighting

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

option_probe_alt_sec
"This variable indicates if the PSE will continue to detect and conditionally class on the Secondary Alternative in the event power is not applied to the Primary Alternative."

'class' is not a verb.

*SuggestedRemedy*

Change as follows:
"This variable indicates if the PSE will continue to detect and conditionally XXclassXX **perform Physical Layer classification** on the Secondary Alternative in the event power is not applied to the Primary Alternative."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **122** *L* **43** # r01-153

Yseboodt, Lennart Philips Lighting

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

"This variable is a function of the results of Detection, Connection Check, Physical Layer Classification, and PD 4PID; see 145.2.6.7."

Unnecessary capitalization.

*SuggestedRemedy*

Change to:
"This variable is a function of the results of detection, connection check, Physical Layer classification, and PD 4PID; see 145.2.6.7."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **124** *L* **19** # r01-154

Yseboodt, Lennart Philips Lighting

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

For pse_avail_pwr, value 3 is described as "Class 0 or 3".
We no longer use Class 0 for assignments / available power, it only exists as a requested power and is treated as if it were Class 3.

*SuggestedRemedy*

Change quoted text to "Class 3".

Do the same for pse_avail_pwr_pri and pse_avail_pwr_sec.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **125** *L* **32** # r01-155

Yseboodt, Lennart Philips Lighting

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

TOPIC:SIGNATURE
These comments fix inconsistencies in the word 'signature'.
When referring to detection, we should talk about "PD detection signature".
When referring to signature configuration, we should either say "single-signature PD, dual-signature PD, or PD signature configuration".
The draft contains 12 instances of the ambiguous "PD signature".

"NOTE---Care should be taken when negating this variable in a PSE performing detection using Alternative A after an invalid signature is detected due to the delay it introduces between detection attempts (see 145.2.5.1)."

*SuggestedRemedy*

Change as follows:
"NOTE---Care should be taken when negating this variable in a PSE performing detection using Alternative A after an invalid **detection** signature is detected due to the delay it introduces between detection attempts (see 145.2.5.1)."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **125** *L* **42** # r01-156

Yseboodt, Lennart Philips Lighting

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

pse_reset_pri:
"Controls the resetting of the PSE state diagram on Alternative A. Condition that is TRUE until such time as the power supply for the device that contains the PSE overall state diagrams has reached the operating region. It is also TRUE when implementation-specific reasons require reset of PSE Alternative A functionality."

Hard links _pri to Alternative A.

*SuggestedRemedy*

- Replace "Alternative A" with "Primary Alternative"
- Replace "Alternative B" with "Secondary Alternative"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **126** *L* **7** # r01-157

Yseboodt, Lennart Philips Lighting

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

"pse_ss_mode: A variable that controls whether the PSE provides power over 2 pair or 4 pair to a Class 0 to 4 single-signature PD."

This refers to assigned Class, and as such, it should be Class 1 to 4.

*SuggestedRemedy*

Replace by: "pse_ss_mode: A variable that controls whether the PSE provides power over 2 pair or 4 pair to a single-signature PD assigned to Class 1 through 4."
Also fix the bad indenting.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **127** *L* **9** # r01-158

Yseboodt, Lennart Philips Lighting

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

There are 5 occurances of the term "state variable" in the draft, and 8 of "the variable". Variables temp_var, temp_var_pri, and temp_var_sec refer to a 'state variable'.

*SuggestedRemedy*

Replace 'state variable' with 'variable' (3x).

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.5** *P* **127** *L* **40** # r01-159

Yseboodt, Lennart Philips Lighting

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

tcc2det_timer: "A timer used to limit the time between Connection Check and Detection when CC_DET_SEQ = 0 or CC_DET_SEQ = 3. See T cc2det in Table 145-7."

Redundant capitals.

*SuggestedRemedy*

"A timer used to limit the time between connection check and detection when CC_DET_SEQ = 0 or CC_DET_SEQ = 3. See T cc2det in Table 145-7."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.5** *P* **127** *L* **48** # r01-160

Yseboodt, Lennart Philips Lighting

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

tcev_timer_pri: "A timer used to limit the second and fourth class event time in Multiple-Event classification on the Primary Alternative; see T CEV in Table 145-14."

That should be 'second through fourth class event time'

*SuggestedRemedy*

Change to: "A timer used to limit the second through fourth class event time in Multiple-Event classification on the Primary Alternative; see T CEV in Table 145-14."

Same fix for tcev_timer_sec.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.5** *P* **128** *L* **14** # r01-161

Yseboodt, Lennart — Philips Lighting

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

TOPIC:SIGNATURE
These comments fix inconsistencies in the word 'signature'.
When referring to detection, we should talk about "PD detection signature".
When referring to signature configuration, we should either say "single-signature PD, dual-signature PD, or PD signature configuration".
The draft contains 12 instances of the ambiguous "PD signature".

tdbo_timer: "A timer used to regulate backoff upon detection of an invalid signature; see T dbo in Table 145-16."

*SuggestedRemedy*

Change as follows:
"A timer used to regulate backoff upon detection of an invalid **detection** signature; see T dbo in Table 145-16."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.6** *P* **130** *L* **6** # r01-162

Yseboodt, Lennart — Philips Lighting

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

The function do_class_probe returns the variable pd_req_pwr.
This variable is also defined in the variables section 145.2.5.4.

A double definition needs to be kept in perfect sync or it can lead to ambiguity.
It would be better simply to point to the variable than re-describe it.

*SuggestedRemedy*

Replace line 6-15 on page 130 by:
"pd_req_pwr: See 'pd_req_pwr' in 145.2.5.4."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.6** *P* **130** *L* **21** # r01-163

Yseboodt, Lennart — Philips Lighting

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

The function do_class_probe_pri returns the variable pd_req_pwr_pri, as does the function do_classification_pri.
A double definition needs to be kept in perfect sync or it can lead to ambiguity.
It would be better simply to point to the variable than re-describe it.

Case in point, the definitions of pd_req_pwr_pri in both functions has drifted apart (one has Class 0, the other does not).

*SuggestedRemedy*

Replace lines 21 to 28 on page 130 with:
"pd_req_pwr_pri: See 'pd_req_pwr_pri' in the function do_classification defined in 145.2.5.6."

Same fix for pd_req_pwr_sec in do_classification_sec.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.6** *P* **130** *L* **30** # r01-164

Yseboodt, Lennart — Philips Lighting

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

The function do_class_probe_pri returns the variable pd_cls_4PID_pri.
This variable is also defined in the variables section 145.2.5.4.

A double definition needs to be kept in perfect sync or it can lead to ambiguity.
It would be better simply to point to the variable than re-describe it.

*SuggestedRemedy*

Replace line 30-36 on page 130 by:
"pd_cls_4PID_pri: See 'pd_cls_4PID_pri' in 145.2.5.4."

Same fix for do_class_probe_sec.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.6** *P* **131** *L* **35** # r01-165

Yseboodt, Lennart — Philips Lighting

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

In do_classification_pri, variable pd_req_pwr_pri, value 5 is decribed as:
"5: Class 5 (pd_class_sig_pri will have a value of 4 for the first two class events and a value of 3 for any subsequent class events.)"

We have removed this description everywhere else, this is a leftover.

*SuggestedRemedy*

Remove quoted text here and also in do_classification_sec.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.6** *P* **132** *L* **43** # r01-166

Yseboodt, Lennart — Philips Lighting

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

TOPIC:SIGNATURE
These comments fix inconsistencies in the word 'signature'.
When referring to detection, we should talk about "PD detection signature".
When referring to signature configuration, we should either say "single-signature PD, dual-signature PD, or PD signature configuration".
The draft contains 12 instances of the ambiguous "PD signature".

"sig_type: This variable indicates the Type of PD signature connected to the PI, with respect to 4-pair operation."
and
"invalid: Neither a single-signature PD nor a dual-signature PD connection check signature has been found. This includes an open circuit condition."

*SuggestedRemedy*

Replace by:
"sig_type: This variable indicates the Type of PD signature **configuration** connected to the PI, with respect to 4-pair operation."
"invalid: Neither a single-signature nor a dual-signature signature configuration has been found. This includes an open circuit condition."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.6** *P* **133** *L* **5** # r01-167

Yseboodt, Lennart — Philips Lighting

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

TOPIC:SIGNATURE
These comments fix inconsistencies in the word 'signature'.
When referring to detection, we should talk about "PD detection signature".
When referring to signature configuration, we should either say "single-signature PD, dual-signature PD, or PD signature configuration".
The draft contains 12 instances of the ambiguous "PD signature".

There are inconsistencies in the way the values for do_detect_pri/sec are described:
"- open_circuit: The PSE has detected an open circuit.
- valid: The PSE has detected a valid PD signature.
- invalid: Neither open circuit nor valid PD detection signature has been found."

*SuggestedRemedy*

Replace by:
"- open_circuit: The PSE has detected an open circuit.
- valid: The PSE has detected a valid PD **detection** signature.
- invalid: Neither **an** open circuit nor **a** valid PD detection signature has been found."

Apply the same fix for do_detect_sec.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.6** *P* **133** *L* **25** # r01-168

Yseboodt, Lennart — Philips Lighting

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

The function do_update_pse_allocated_pwr returns the variable pse_allocated_pwr.
This variable is also defined in the variables section 145.2.5.4.

A double definition needs to be kept in perfect sync or it can lead to ambiguity.
It would be better simply to point to the variable than re-describe it.

*SuggestedRemedy*

Replace line 29-38 by:
"pse_allocated_pwr: See 'pse_allocated_pwr' in 145.2.5.4."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.6** *P* **133** *L* **43** # r01-169

Yseboodt, Lennart Philips Lighting

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

The function do_update_pse_allocated_pwr_pri returns the variable pse_allocated_pwr_pri. This variable is also returned by the do_classification_pri function.

A double definition needs to be kept in perfect sync or it can lead to ambiguity.
It would be better simply to point to the variable than re-describe it.

*SuggestedRemedy*

Replace line 29-38 on page 133 by:
"pse_allocated_pwr_pri: See 'pse_allocated_pwr_pri' returned by the function do_classification_pri defined in 145.2.5.6."

Same fix for pse_allocated_pwr_sec.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **135** *L* **6** # r01-170

Yseboodt, Lennart Philips Lighting

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

We need to reset a couple of variables / timers in the IDLE state to allow multiple passes through the state diagram as indicated by simulation.

*SuggestedRemedy*

Add in state "IDLE" the following statements:
"stop tcc2det_timer"
"stop tdet2det_timer"
"sig_pri = FALSE"
"sig_sec = FALSE"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **135** *L* **6** # r01-171

Yseboodt, Lennart Philips Lighting

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

The requirements on 4PID and pd_4pair_cand are incompletely implemented in the state diagram.
For dual-signature the value is set, however for single-signature it is not.
While pd_4pair_cand is never referenced by the single-sig state diagram (it is implicit), we should set it correctly to match with the 4PID text in 145.2.6.7. The current state diagram forces pd_4pair_cand to be False when a single-sig is connected, which is wrong.

This comment assumes that another comment will make changes to the SISM state diagrams such that they no longer continuously execute the ENTRY_PRI state (which would effectively force pd_4pair_cand to be False in single-sig).

*SuggestedRemedy*

- add "pd_4pair_cand = False" to IDLE
- add the following to CLASSIFICATION
"IF (pse_alternative = both) THEN
  pd_4pair_cand = True
END"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **135** *L* **13** # r01-172

Yseboodt, Lennart Philips Lighting

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

In IDLE we have "alt_pri = user defined". The value 'user defined' is not a valid value for alt_pri.
This is the only instance in the state diagram where we do this.
We're trying to textually describe that this variable may/must be set by the "user".

*SuggestedRemedy*

Remove this ELSE statement.
Setting alt_pri is done 'outside' of the state diagram, and use of this variable will be clarified by yseboodt_06_0117_variablerules.pdf

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **136** *L* **36** # r01-173

Yseboodt, Lennart Philips Lighting

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

There are spaces before "(det_temp= ..."

*SuggestedRemedy*

Remove spaces.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **137** *L* **33** # r01-174

Yseboodt, Lennart Philips Lighting

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

There is a cornercase bug in single-signature classification.
If:
- pse_alternative = a or b (so, 2-pair PSE)
- option_2ev = True (PSE only wants to do 2 class events when it has class 4 power)
- pse_allocated_pwr > 4 (a bit strange, but it is an allowed permutation...)

Then the branch logic out of CLASS_EV2 is wrong and it makes a third class event even though option_2ev is set.

Also, we should reset allocated power to zero in IDLE.

*SuggestedRemedy*

- Change logic from CLASS_EV2 to MARK_EV_LAST to:
"tcev_timer_done * option_2ev * ((pse_avail_pwr = 4) + (pse_alternative != both)) * (pd_class_sig = 4)"

- Change logic from CLASS_EV2 to MARK_EV2 to:
"tcev_timer_done * (pd_class_sig = 4) * (((pse_avail_pwr > 4) * (pse_alternative = both)) + !option_2ev)"

- Add to IDLE
"pse_allocated_pwr = 0"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **140** *L* **5** # r01-175

Yseboodt, Lennart Philips Lighting

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

State "SEMI_PWRON_PRI" and "SEMI_PWRON_SEC" state name box badly drawn.
For this reason the variable name "!power_available" in the exit branch is not shown completely.

*SuggestedRemedy*

Redraw state and correct variable name.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **140** *L* **5** # r01-176

Yseboodt, Lennart Philips Lighting

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

The semi-independent PSE state diagrams' states all end on "_PRI" or "_SEC" to denote which SISM machine they are part of.
The states SEMI_PWRON_PRI and SEMI_PWRON_SEC are an exception to this, being part of the top level state diagram.

*SuggestedRemedy*

- Rename SEMI_PWRON_PRI to PRIMARY_SEMI_PWRON
- Rename SEMI_PWRON_SEC to SECONDARY_SEMI_PWRON

(don't forget the label on page 139!)

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **141** *L* **7** # r01-177

Yseboodt, Lennart Philips Lighting

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

State "ENTRY_PRI" and state "ENTRY_SEC" are evaluated constantly when sism is false.
This corrupts the "sig_pri" assignment of a single signature pd detection.
Also variable "pd_4pair_cand" is constantly set to False.

*SuggestedRemedy*

Adopt "yseboodt_03_1117_psesdconcur.pdf".

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **148** *L* **11** # r01-178

Yseboodt, Lennart Philips Lighting

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

Arc from CLASS_EVAL_SEC to POWER_UP_SEC:
"ted_timer_sec_done * ted_timer_done *
(pd_req_pwr_sec <= pse_avail_pwr_sec) *
pd_4pair_cand)"

Has extra closing paren. SYNTAX ERROR.

*SuggestedRemedy*

Remove final closing paren.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **150** *L* **1** # r01-179

Yseboodt, Lennart Philips Lighting

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

The inrush monitor state diagrams... don't really monitor anything do they ?
They've just become a complicated way to start the inrush timer when alt_pwrd_pri/sec is asserted.

*SuggestedRemedy*

- Remove Figure 145-19
- in POWER_UP, after 'alt_pwrd_pri <= TRUE', add 'start tinrush_pri_timer'
- in POWER_UP, after 'alt_pwrd_sec <= TRUE', add 'start tinrush_sec_timer'
- in POWER_UP_PRI, add 'start tinrush_pri_timer'
- in POWER_UP_SEC, add 'start tinrush_sec_timer'
- Remove last sentence of paragraph at page 116, line 51.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.6** *P* **150** *L* **28** # r01-180

Yseboodt, Lennart Philips Lighting

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

TOPIC:SIGNATURE
These comments fix inconsistencies in the word 'signature'.
When referring to detection, we should talk about "PD detection signature".
When referring to signature configuration, we should either say "single-signature PD, dual-signature PD, or PD signature configuration".
The draft contains 12 instances of the ambiguous "PD signature".

"The PSE is not required to continuously probe to detect a PD signature.
The period of time when a PSE is not attempting to detect a PD signature is implementation dependent.

A PSE detecting an invalid PD signature on either Alternative may perform detection on the other Alternative, and if valid may perform classification on that pairset."

*SuggestedRemedy*

Change as follows:
"The PSE is not required to continuously probe to detect a PD **detection** signature.
The period of time when a PSE is not attempting to detect a PD **detection** signature is implementation dependent.

A PSE detecting an invalid PD **detection** signature on either Alternative may perform detection on the other Alternative, and if valid may perform classification on that pairset."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.6.1** *P* **150** *L* **37** # r01-181

Yseboodt, Lennart Philips Lighting

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

"PSEs that will source power on both pairsets shall complete a connection check prior to the classification of a PD as defined in 145.2.7 to determine if the PSE is connected to a single-signature PD configuration, a dual-signature PD configuration, or neither."

While I certainly agree with this requirement, ... how are we going to test this ?
Can we somehow derive the result of cc-check at the PI ?

*SuggestedRemedy*

Rewrite this requirement such that it can be tested or remove it.
[I know this is not remedy, but I don't have a solution offhand on how to do this].

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.6.4** *P* **153** *L* **17** # r01-182

Yseboodt, Lennart Philips Lighting

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

TOPIC:SIGNATURE
These comments fix inconsistencies in the word 'signature'.
When referring to detection, we should talk about "PD detection signature".
When referring to signature configuration, we should either say "single-signature PD, dual-signature PD, or PD signature configuration".
The draft contains 12 instances of the ambiguous "PD signature".

"A PSE shall accept as a valid PD signature a pairset with all of the characteristics specified in Table 145-9."

*SuggestedRemedy*

Change as follows:
"A PSE shall accept as a valid PD **detection** signature a pairset with all of the characteristics specified in Table 145-9."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.6.5** *P* **153** *L* **35** # r01-183

Yseboodt, Lennart Philips Lighting

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

TOPIC:SIGNATURE
These comments fix inconsistencies in the word 'signature'.
When referring to detection, we should talk about "PD detection signature".
When referring to signature configuration, we should either say "single-signature PD, dual-signature PD, or PD signature configuration".
The draft contains 12 instances of the ambiguous "PD signature".

"The PSE shall reject a pairset within a link section as having an invalid signature, when the pairset exhibits any of the following characteristics as defined in Table 145-10:"

*SuggestedRemedy*

Change as follows:
"The PSE shall reject a pairset within a link section as having an invalid **detection** signature, when the pairset exhibits any of the following characteristics as defined in Table 145-10:"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.6.5** *P* **153** *L* **35** # r01-184

Yseboodt, Lennart Philips Lighting

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

"The PSE shall reject a pairset within a link section as having an invalid signature, when the pairset exhibits any of the following characteristics as defined in Table 145-10:"

For comparison, this is the text for valid:
"A PSE shall accept as a valid PD signature a pairset with all of the characteristics specified in Table 145-9."

What is "a pairset within a link section"... ?
This strange construction also exists in Clause 33.
The PSE is not in the business of rejecting pairsets or link sections...
Let's try to mimick the 'valid' text which makes at least some sense.

*SuggestedRemedy*

Replace as follows:
"The PSE shall reject as an invalid detection signature, a pairset which exhibits any of the following characteristics as defined in Table 145-10:"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.6.7** *P* **154** *L* **20** # r01-185

Yseboodt, Lennart — Philips Lighting

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

"PSEs shall determine whether an attached PD is a candidate to receive power on both pairsets prior to applying operating voltage to both pairsets. This determination is referred to as 4PID. 4PID shall be determined as a logical function of the detection state of both pairsets, the result of connection check as described in 145.2.6.1, mutual identification, and the results of the Power via MDI TLV described in 79.3.2. It shall be stored in the variable pd_4pair_cand, defined in 145.2.5.4.

A PSE shall not apply 4-pair power unless the PSE has detected a valid detection signature on both pairsets and one or more of the following conditions are met:"

No less than four shalls.
First shall : untestable (the shall is to determine something).
Second shall: untestable because unclear (again a determination without specifics on what is pass/fail)
Third shall : contradicted by the state diagram (but we will fix that) AND untestable.
Fourth shall: Hurray! A valid shall statement.

Also, the text refers to "the results of the Power via MDI TLV described in 79.3.2" which no longer has influence on pd_4pair_cand.

Also, the state diagram only follows this text partly, as pd_4pair_cand is only set for dual-signature operation.
Another comment will make state diagram changes, I won't do it here to keep of that stuff together.

*SuggestedRemedy*

Replace by:
"PSEs determine whether an attached PD is a candidate to receive power on both pairsets prior to applying operating voltage to both pairsets. This determination is referred to as 4PID. 4PID is a logical function of the detection state of both pairsets, the result of connection check as described in 145.2.6.1, and mutual identification. The variable pd_4pair_cand, defined in 145.2.5.4, contains the result of this determination.

A PSE shall not apply 4-pair power unless the PSE has detected a valid detection signature on both pairsets and one or more of the following conditions are met:"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.7** *P* **155** *L* **7** # r01-186

Yseboodt, Lennart — Philips Lighting

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

"PSE implementations may use VPSE = VPort_PSE-2P min and RChan = RCh when powering using a single pairset, or RChan = RCh/2 when powering using two pairsets to arrive at over-margined values as shown in Table 145-11."
The use of pairset is confusing here, because one sentence above 2-pair is used.

*SuggestedRemedy*

Change to:
"PSE implementations may use VPSE = VPort_PSE-2P min and RChan = RCh when powering using 2-pair, or RChan = RCh/2 when powering using 4-pair to arrive at over-margined values as shown in Table 145-11."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.7** *P* **155** *L* **39** # r01-187

Yseboodt, Lennart — Philips Lighting

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

"Measurements should be averaged using any sliding window with a width of 1 s."

Rejected comment i-79 against D3.0 wanted to remove this sentence with the following rationale:
This sentence follows after the definition of PClass and PClass-2P.
That whole section is informative in nature.
- Why is this a should ?
- Measurements of what ? PClass is a capability.
- The actual power requirement of a PSE is encoded in ICon-2P.

We need to find the appropriate place to indicate that PSE output power capability is to be measured with a sliding window.

*SuggestedRemedy*

Output 'power' is encoded in ICon-2P, hence it makes sense to put a sentence there.

- Remove quoted sentence
- In 145.2.8.5, page 164, line 43, after:
"PSEs shall be able to source I Con-2P , the current the PSE supports on each powered pairset, as defined in Equation (145-8)."
append:
"ICon-2P should be measured using a sliding window with a width of 1 second."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.7.1** *P* **158** *L* **27** # r01-188

Yseboodt, Lennart Philips Lighting

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

"When the PSE is in the state CLASS_EV1_LCE, CLASS_EV1_AUTO, CLASS_EV1_LCE_PRI, CLASS_EV1_LCE_SEC, CLASS_EV1_LCE_4PID_PRI, or CLASS_EV1_LCE_4PID_SEC,
it shall provide to the PI or pairset VClass, subject to T LCE timing specification."

Do not use "in the state" when describing capital statenames.

*SuggestedRemedy*

Change to:
"When the PSE is in CLASS_EV1_LCE, CLASS_EV1_AUTO, CLASS_EV1_LCE_PRI, CLASS_EV1_LCE_SEC, CLASS_EV1_LCE_4PID_PRI, or CLASS_EV1_LCE_4PID_SEC, it shall provide to the PI or pairset VClass, subject to T LCE timing specification."

Also on lines 32, 36, 44, 47 and 52 remove "in the state".

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.7.2** *P* **160** *L* **10** # r01-189

Yseboodt, Lennart Philips Lighting

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

"P ac_margin is the minimum amount of power the PSE must add to P Autoclass in order to allocate ..."

Word 'must' is not permitted.

*SuggestedRemedy*

Replace by:
"P ac_margin is the minimum amount of power the PSE adds to P Autoclass in order to allocate ..."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.7.2** *P* **160** *L* **32** # r01-190

Yseboodt, Lennart Philips Lighting

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

Autoclass minimum margin was calculated with overly pessimistic assumptions on cable resistance and operating conditions.
The current curve fits lead to excessive margin being provisioned for cable heating.
New information obtained during recent testing (by UL and the measurements presented at the July plenary) allow for optimized curve fits.

*SuggestedRemedy*

Adopt yseboodt_02_1117_autoclassmargin.pdf

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8** *P* **161** *L* **32** # r01-191

Yseboodt, Lennart Philips Lighting

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

In Table 145-16 item 6 "Total output current of both pairs of the same polarity during POWER UP per the assigned Class"
Statename is with an underscore.

*SuggestedRemedy*

Change to:
"Total output current of both pairs of the same polarity during POWER_UP per the assigned Class"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.1** *P* **163** *L* **43** # r01-192

Yseboodt, Lennart Philips Lighting

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

"A PSE that has assigned Class 5 to 8 to a single-signature PD shall apply power to both pairsets while in a power on state."

We changed this from "POWER_ON" to the less explicit "a power on state".
It could be inferred that this includes the SEMI_PWRON_PRI/SEC states which is for sure not the case.
Given that POWER_UPDATE is a state in which no physical time is spent, we are safe to refer to just POWER_ON.

*SuggestedRemedy*

Revert to:
"A PSE that has assigned Class 5 to 8 to a single-signature PD shall apply power to both pairsets while in POWER_ON."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.2** *P* **163** *L* **51** # r01-193

Yseboodt, Lennart Philips Lighting

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

"VPort_PSE_diff, as defined in Table 145-16, is the maximum voltage difference between pairs with the same
polarity, at no load condition, when operating over 4 pairs, in the power on state."

Multiple power on states, do not use "the power on state".

*SuggestedRemedy*

Change to:
"VPort_PSE_diff, as defined in Table 145-16, is the maximum voltage difference between pairs with the same polarity, at no load condition, when operating over 4 pairs, in a power on state."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.4** *P* **164** *L* **17** # r01-194

Yseboodt, Lennart Philips Lighting

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

There is a double period on this line (one of which subscript).

*SuggestedRemedy*

Fix.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.5** *P* **164** *L* **23** # r01-195

Yseboodt, Lennart Philips Lighting

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

"IPort-2P and IPort-2P-other are the currents on the pairs with the same polarity of the two pairsets and are defined in Equation (145-5) and in Equation (145-6)."
"of the two pairsets" does not add anything, remove this part.

*SuggestedRemedy*

Change to:
"IPort-2P and IPort-2P-other are the currents on the pairs with the same polarity and are defined in Equation (145-5) and in Equation (145-6)."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.5** *P* **165** *L* **10** # r01-196

Yseboodt, Lennart Philips Lighting

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

"When powering a single-signature PD over 4 pairs, a PSE supports:
- A minimum current of I Unbalance-2P over one of the pairs of the same polarity..."

The current a PSE is required to support is ICon-2P-unb, whereas IUnbalance-2P is the maximum unbalance current that occurs under worst-case conditions.

*SuggestedRemedy*

Replace I_Unbalance-2P by ICon-2P-unb in the quoted sentence.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.5** *P* **165** *L* **38** # r01-197

Yseboodt, Lennart Philips Lighting

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

"is the minimum current due to unbalance effects a PSE must support on a pairset as defined in Equation (145-12)"

Must no good.

*SuggestedRemedy*

"is the minimum current due to unbalance effects a PSE supports on a pairset as defined in Equation (145-12)"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.5.1** *P* **166** *L* **26** # r01-198

Yseboodt, Lennart Philips Lighting

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

In table 145-17 which defined IUnbalance-2P the column "Value" does not convey this is a maximum.

*SuggestedRemedy*

Change column name to "Max"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.5.1** *P* **166** *L* **27** # r01-199

Yseboodt, Lennart Philips Lighting

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

In the last cycle the values of IUnbalance-2P were increased without corresponding changes to RSource and RLoad.
This leads to the 'extra' unbalance margin being assigned to both the PSE and the PD.
PSEs and PDs that meet their respective unbalance requirements will now exceed IUnbalance-2P when hooked up together.

I suspect we need updates to RSource and RLoad.

*SuggestedRemedy*

Adopt yseboodt_07_0117_unbalance.pdf

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.5.1** *P* **166** *L* **28** # r01-200

Yseboodt, Lennart Philips Lighting

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

Table 145-17 lists the maximum pair unbalance current in the PSE unbalance section.
The value for Assigned Class 1 to 4 is "ICon".
We need a similar explanation as exists for ICon-2P-unb in Table 145-16.

*SuggestedRemedy*

Add footnote to "1 to 4" that says: "Unbalance current for these assigned Classes is not restricted."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.5.1** *P* **167** *L* **19** # r01-201

Yseboodt, Lennart Philips Lighting

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

"is, given R PSE_min , the highest allowable common mode effective resistance in the powered pairs of the same polarity"

'allowable' is not the best word, what is meant is 'supported'.
There are 4 instances of 'allowable' in the draft, all related to R_PSE.

*SuggestedRemedy*

Replace 'allowable' by 'supported' throughout the draft.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.5.1** *P* **167** *L* **34** # r01-202

Yseboodt, Lennart Philips Lighting

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

"Table 145-18 specifies the values of resistance used to compute Rload_min and Rload_max according to
Equation (145-14), Equation (145-15)."
"values of resistance" is strange.

Resistances is futile.

*SuggestedRemedy*

Change to:
"Table 145-18 specifies the resistance values used to compute Rload_min and Rload_max according to
Equation (145-14), Equation (145-15)."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.5.1** *P* **167** *L* **35** # r01-203

Yseboodt, Lennart Philips Lighting

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

"The load resistances Rload_min and Rload_max are split into two series resistances Rload1_min and R load2_min, and Rload1_max and Rload2_max respectively, as shown in Figure 145-22, to correctly be able to set the power sink."
Strange ending in last part.

*SuggestedRemedy*

Change to:
"The load resistances Rload_min and Rload_max are split into two series resistances Rload1_min and R load2_min, and Rload1_max and Rload2_max respectively, as shown in Figure 145-22, such that the power sink can be set correctly."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.5.1** *P* **167** *L* **36** # r01-204

Yseboodt, Lennart Philips Lighting

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

"according to Equation (145-14), Equation (145-15).The load resistances"

Missing space and missing conjunction.

*SuggestedRemedy*

Replace by "according to Equation (145-14) and Equation (145-15). The load resistances"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.6** *P* **169** *L* **5** # r01-205

Yseboodt, Lennart Philips Lighting

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

"PSEs that have assigned Class 5 to 8 to a single-signature PD shall reach the power on state on
both pairsets within TInrush max, starting with the first pairset transitioning into the power up state, and where the second pairset transitions to a power up state anytime within this time period."

This solely applies to the one and only POWER_ON state.
"a power up state" is misleading as there is only one POWER_UP state, however each pairset can go independently into a 'power up' condition.

*SuggestedRemedy*

Change to:
"PSEs that have assigned Class 5 to 8 to a single-signature PD shall reach POWER_ON on
both pairsets within TInrush max, starting with the first pairset transitioning into power up, and
where the second pairset transitions to power up anytime within this time period."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.6** *P* **169** *L* **20** # r01-206

Yseboodt, Lennart Philips Lighting

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

The line depicting the IPSEIT-2P should stop at the 75ms mark in Figure 145-23, but it runs past it.

*SuggestedRemedy*

Shorten line to end at the 75ms mark.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.6** *P* **169** *L* **25** # r01-207

Yseboodt, Lennart Philips Lighting

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

"Figure 145-23--Per pairset inrush transient limits"

Improper description, this Figure depicts I_PSEIT-2P which is the PSE inrush maximum limit.

*SuggestedRemedy*

Change title to "Per pairset PSE inrush maximum current limit"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.6** *P* **169** *L* **30** # r01-208

Yseboodt, Lennart Philips Lighting

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

"IInrush-2P" is a range for dual-signature, thus the maximum value should be used.

*SuggestedRemedy*

Change "IInrush-2P" to "IInrush-2P max", 5 occurances.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.6** *P* **169** *L* **39** # r01-209

Yseboodt, Lennart Philips Lighting

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

"is the maximum value of I Inrush-2P or I Inrush as defined in Table 145-16"

We got rid of this dual equation for IInrush-2P and IInrush. Now solely applies to IInrush-2P.

*SuggestedRemedy*

Remove "or IInrush" from quoted sentence.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.6** *P* **169** *L* **44** # r01-210

Yseboodt, Lennart Philips Lighting

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

"The minimum I Inrush and I Inrush-2P current capability as defined in Table 145-16 applies when VPSE exceeds 30 V. During a power up state, the minimum supported current is as follows:"

This is an exception to the shall on line 8, but it introduces new minimums. As such, this should be a requirement also.
The requirements that follow are hard to parse.

*SuggestedRemedy*

Replace page 169, line 44-52 as follows:
"The minimum I Inrush and I Inrush-2P current capability as defined in Table 145-16 applies when VPSE exceeds 30 V.
During a power up state, PSE shall support:
- when powering a single-signature PD, a minimum IInrush of 5mA when VPSE is between 0V and 10V, and 60mA when VPSE is between 10V and 30V,
- when powering a dual-signature PD, a minimum IInrush-2P of 5mA when VPSE is between 0V and 10V, and 60mA when VPSE is between 10V and 30V."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.8** *P* **170** *L* **8** # r01-211

Yseboodt, Lennart Philips Lighting

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

Subclause 145.2.8.8 starts as follows:
"-- For Type 3 PSEs, Figure 145-24, Equation (145-17) and Equation (145-19) apply.
-- For Type 4 PSEs, Figure 145-25, Equation (145-18) and Equation (145-20) apply."

This text should come after the first paragraph.

*SuggestedRemedy*

Move dashed list to after the first paragraph.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.8** *P* **170** *L* **13** # r01-212

Yseboodt, Lennart Philips Lighting

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

"A PSE may remove power from the PI if the PI current meets or exceeds the "PSE lowerbound template" in Figure 145-24 and Figure 145-25."

Only one of those figures applies to a given PSE. Change 'and' to 'or'.

*SuggestedRemedy*

"A PSE may remove power from the PI if the PI current meets or exceeds the "PSE lowerbound template" in Figure 145-24 or Figure 145-25."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.9** *P* **172** *L* **32** # r01-213

Yseboodt, Lennart Philips Lighting

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

See comment i-126 / D3.0. which proposed a change to the turn off text.
That remedy was changed in the room, but we failed to look at the sentence that follows.
Those two are now in contradiction:

"The specification for T Off in Table 145-16 shall apply to the discharge time from VPort_PSE-2P min to V Off of a pairset with a test resistor of 320 kOhm attached to that pairset. In addition, it is recommended that the pairset be discharged when voltage is not applied. T Off starts when V PSE drops 1 V below the steady-state value after the alt_pwrd_pri and alt_pwrd_sec variables are cleared (see Figure 145-13). T Off ends when V PSE <= V Off max."

*SuggestedRemedy*

Either:
a) Change first sentence to:
"The specification for TOff in Table 145-16 shall apply to the discharge time from operating voltage to VOff of a pairset with a test resistor of 320 kohm attached to that pairset."

or;
b) Remove the sentence "T Off starts when V PSE drops 1 V below the steady-state value after the alt_pwrd_pri and alt_pwrd_sec variables are cleared (see Figure 145-13)."

Change middle sentence as follows:
"In addition, it is recommended that the pairset be discharged when operating voltage is not applied."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.9** *P* **172** *L* **37** # r01-214

Yseboodt, Lennart Philips Lighting

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

"TOff ends when VPSE <= VOff max."
Voff is a max.

*SuggestedRemedy*

Change to:
"TOff ends when VPSE <= VOff."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.10** *P* **172** *L* **40** # r01-215

Yseboodt, Lennart Philips Lighting

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

"The specification for VOff in Table 145-16 shall apply to the PI voltage in the IDLE."
Comment number i-128 against Draft 3.0 has not been implemented.

*SuggestedRemedy*

Remove this sentence.

*Proposed Response* *Response Status* **O**

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*Cl* **145** *SC* **145.2.8.10** *P* **172** *L* **44** # r01-216

Yseboodt, Lennart Philips Lighting

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

"The voltage at the PI shall be equal or less than V Off , as defined in Table 145-16, when the PSE is in DISABLED, IDLE, or ERROR_DELAY."

Also applies to BACKOFF state.
Or does that mess up detection by the other PSE ?

*SuggestedRemedy*

Add BACKOFF to the listed states.

*Proposed Response* *Response Status* **O**

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*Cl* **145** *SC* **145.2.8.12** *P* **173** *L* **8** # r01-217

Yseboodt, Lennart Philips Lighting

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

"Type 4 PSEs shall not source more power than P Type max, as defined in Table 145-16, measured using a sliding window with a width up to 4 seconds."

PSEs may source more than PType for up to 4 seconds. Text allows any sliding window smaller than 4 seconds to be used. Also this doesn't work.
We need a similar construct as for PPeak.

*SuggestedRemedy*

Replace by:
"Type 4 PSEs shall not source more power than P Type max, as defined in Table 145-16, for longer than 4 seconds, with a maximum duty cycle of 1%."

*Proposed Response* *Response Status* **O**

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*Cl* **145** *SC* **145.2.10** *P* **174** *L* **10** # r01-218

Yseboodt, Lennart Philips Lighting

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

Subclause 145.2.10 "PSE power removal" contains just one sentence:
"Figure 145-17, Figure 145-18, and Figure 145-19 show the PSE monitor state diagrams. These state diagrams monitor for inrush current and the absence of the Maintain Power Signature (MPS)."

It is followed by 145.2.11 which describes MPS.

In the base standard, the MPS requirements were a subclause of PSE power removal and subdivided in to AC and DC MPS.
The current 145.2.10 as-is makes little sense.
145.2.11 (on MPS), does a poor job of introducing the topic.

*SuggestedRemedy*

- Delete 145.2.10
- Add as new first paragraph to 145.2.11:
"A PSE is required to remove power when a powered connected PD no longer draws a minimum amount of current.
This is referred to as the 'Maintain Power Signature'. The PSE state diagrams in Figure 145-17 and Figure 145-18 monitor for the absence of MPS."

*Proposed Response* *Response Status* **O**

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*Cl* **145** *SC* **145.2.11** *P* **174** *L* **18** # r01-219

Yseboodt, Lennart Philips Lighting

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

"The specification for T MPS in Table 145-16 applies only to the DC MPS component."

Remnant from the past: we only have DC MPS in Clause 145, which we just call "MPS".

*SuggestedRemedy*

- Remove quoted sentence
- Search and replace "DC MPS" by "MPS" in Clause 145

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3** *P* **175** *L* **24** # r01-220

Yseboodt, Lennart — Philips Lighting

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

"Additional electrical specifications that apply to the PD are in 145.4."

*SuggestedRemedy*

"Additional electrical specifications that apply to the PD are **specified** in 145.4."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.2** *P* **176** *L* **34** # r01-221

Yseboodt, Lennart — Philips Lighting

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

"PDs shall be capable of accepting power in any valid 2-pair configuration and any valid 4-pair configuration as defined in Table 145-19."
Reference to Table is wrong, should be Table 145-20.

*SuggestedRemedy*

Change to:
"PDs shall be capable of accepting power in any valid 2-pair configuration and any valid 4-pair configuration as defined in Table 145-20."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.2** *P* **176** *L* **49** # r01-222

Yseboodt, Lennart — Philips Lighting

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

"The PD shall withstand any voltage from 0 V to 57 V applied any of the valid configurations defined in Table 145-20 indefinitely without permanent damage."

Missing word 'per'.

*SuggestedRemedy*

"The PD shall withstand any voltage from 0 V to 57 V applied **per** any of the valid configurations defined in Table 145-20 indefinitely without permanent damage."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.3** *P* **178** *L* **26** # r01-223

Yseboodt, Lennart — Philips Lighting

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

Variable name "VReset_PD max" is the only variable with a space in the name.

*SuggestedRemedy*

Change name to "VReset_PD_max" and update usage in PD state diagrams.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.4** *P* **178** *L* **52** # r01-224

Yseboodt, Lennart — Philips Lighting

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

pd_acs_req: "This variable indicates whether the PD performs an Autoclass request during Physical Layer classification. See 145.3.6.2."

That is a very poor description of what this variable does.

*SuggestedRemedy*

Replace by:
"This variable indicates if a PD will draw P_Autoclass_PD in the Autoclass time window after reaching POWERED. See 145.3.6.2."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.3** *P* **180** *L* **52** # r01-225

Yseboodt, Lennart — Philips Lighting

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

VPD is not in alphabetically correct place.

*SuggestedRemedy*

Move "VPD" after "VOn_PD".

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.6** *P* **181** *L* **50** # r01-226

Yseboodt, Lennart Philips Lighting

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

The function do_update_pse_assigned_class returns the variable pse_assigned_class.
This variable is also defined in the variables section 145.3.3.4.

A double definition needs to be kept in perfect sync or it can lead to ambiguity.
It would be better simply to point to the variable than re-describe it.

*SuggestedRemedy*

Replace page 181 line 50 through page 182 line 5 by:
"pse_assigned_class: See 'pse_assigned_class' defined in 145.3.3.4."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.7** *P* **184** *L* **30** # r01-227

Yseboodt, Lennart Philips Lighting

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

There is a possibility for intentional abuse of the NOPOWER state in the PD state diagram.
A PD can exit the INRUSH state at any time less than 50ms to POWER_DELAY.
If it does so while the PSE is still in inrush, and VPD is less than Voff_pd, the state diagram loops through NOPOWER and defeats classification.
It is PD undemotion essentially.

To close this hole we need to remove the arc from POWER_DELAY to NOPOWER.

*SuggestedRemedy*

- Remove the arc from POWER_DELAY to NOPOWER.
- Same fix in the dual-signature state diagram.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.8** *P* **185** *L* **30** # r01-228

Yseboodt, Lennart Philips Lighting

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

Comment i-133 against D3.0 only instructed to make changes to single-signature, but fix also applies to dual-sig.

Issue:
Short summary: There is no mention in our spec that a PD should implement hysteresis for V_Mark_th.
Without hysteresis it is possible to get spurious class/mark transitions due to the voltage
drop of around 0.5V caused by the class current.
It is compounded by the PD state diagram listing VMark_Th in the constants section,
implying the value cannot change while the state diagram is running.

*SuggestedRemedy*

- Move VMark_th, VOff_PD, VOn_PD, VReset_th from 145.3.3.8 (constants) to 145.3.3.9 (variables)
- Change VReset_PD to VReset_PD_max

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.8** *P* **185** *L* **49** # r01-229

Yseboodt, Lennart Philips Lighting

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

Variable "VReset_PD" needs to be updated to match single-signature.

*SuggestedRemedy*

Change variable name to "VReset_PD_max" and update description to match single-signature, also change name in statediagram.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.9** *P* **186** *L* **12** # r01-230

Yseboodt, Lennart — Philips Lighting

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

See i-136 against D3.0 which removed pd_current_limit for single-signature.
Should also be done for dual-sig.

*SuggestedRemedy*

Remove pd_current_limit_mode(X) in 145.3.3.9 and remove it's use in the dual-sig state diagram.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.9** *P* **186** *L* **17** # r01-231

Yseboodt, Lennart — Philips Lighting

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

Variables "pd_dll_capable_mode(X)" and "pd_dll_enable_mode(X)" do not need the "mode" part.

*SuggestedRemedy*

Change variables to "pd_dll_capable" and "pd_dll_enable".
Remove reference to "Mode(X)" from descriptions.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.11** *P* **188** *L* **26** # r01-232

Yseboodt, Lennart — Philips Lighting

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

The function do_update_pse_assigned_class_mode(X) returns the variable pse_assigned_class_mode(X).
This variable is also defined in the variables section 145.3.3.9.

A double definition needs to be kept in perfect sync or it can lead to ambiguity.
It would be better simply to point to the variable than re-describe it.

*SuggestedRemedy*

Replace page 188 line 26 to 33 by:
"pse_assigned_class_mode(X): See 'pse_assigned_class_mode(X)' defined in 145.3.3.9."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.12** *P* **190** *L* **19** # r01-233

Yseboodt, Lennart — Philips Lighting

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

In state "POWERED" the statement: "pd_max_power_mode(X) = min(pse_power_level_mode(X), pd_req_class_mode(X))" is wrong.
The variable "pse_power_level_mode(X)" should be "pse_assigned_class_mode(X)".

*SuggestedRemedy*

Change to "pd_max_power_mode(X) = min(pse_assigned_class_mode(X), pd_req_class_mode(X))".

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.12** *P* **190** *L* **21** # r01-234

Yseboodt, Lennart — Philips Lighting

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

In state "NOPOWER" the variable "pd_max_power(X)" is missing the "mode".

*SuggestedRemedy*

Change variable to "pd_max_power_mode(X)".

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8** *P* **198** *L* **10** # r01-235

Yseboodt, Lennart — Philips Lighting

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

Last cycle we removed the PD Type column in Table 145-29, and in the process we found 1 parameter that seemed to depend on Type: V_Overload-2P.
That is false, like other power related parameters, this also depends on assigned Class, not on Type.
Furthermore, the value for "Type 3" aka "Class 1-6" is wrong, it should be 39.4V

*SuggestedRemedy*

Replace rows:
- Single-signature PD, Class 1-6 and dual-signature PD Class 1-4 = 39.4V
- Single-signature PD, Class 7-8 and dual-signature PD Class 5 = 40.4V

Editor to split VOverload into a single-signature and dual-signature subitem in order to prevent large amount of text in the Parameter cell.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8** *P* **199** *L* **40** # r01-236

Yseboodt, Lennart — Philips Lighting

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

Table 145-29, items 15 and 16:
"PI capacitance during MDI_POWER states for single-signature PDs"
and
"Pairset capacitance during MDI_POWER states for dual-signature PDs"

MDI_POWER states haven't existed for a while now...

*SuggestedRemedy*

Replace item 15 description by:
"Single-signature PD capacitance while in INRUSH, POWER_DELAY, or POWERED"
and item 16:
"Dual-signature PD pairset capacitance while in INRUSH, POWER_DELAY, or POWERED"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8** *P* **200** *L* **13** # r01-237

Yseboodt, Lennart — Philips Lighting

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

Item 18 in Table 145-29 comprises of two different symbols.
Also the numbering is off (next item is 20).

*SuggestedRemedy*

Split VOn_PD and VOff_PD into two different items (18 and 19).

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8** *P* **200** *L* **16** # r01-238

Yseboodt, Lennart — Philips Lighting

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

Table 145-29, item 18: VOff_PD is a range from 30V to VPort_PD-2P min.

This is in direct contradiction with the peak and transient specification, both of which are conditions that require the PD to continue operating, but both cause VPD to go into the VOff_PD range.
In addition, per the state diagram, drawing peak power would warrant a loop through the NOPOWER state, which should never happen.

We can't just change the max value though, as for normal operation a PD is only guaranteed to work in the VPort_PD-2P range.

Proposed:

30V - 42V = Von_PD ==> PD shall turn on in this range
30V - 36V = Voff_PD ==> PD shall turn off in this range
36V - VPort-2P min ==> PD may turn off if condition persists longer than TCUT min
VPort_PD-2P ==> PD shall stay on in this range

*SuggestedRemedy*

- Change VOff_PD max to 36 volt. (# This is the minimum voltage during transients)
- Add sentence after p201,line 6: "The PD shall turn off at a voltage in the range of V Off_PD." as follows:
"The PD may turn off if the voltage in the range of VOff_PD to VPort_PD-2P min persists for longer than TCUT min".

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8.2.1** *P* **201** *L* **37** # r01-239

Yseboodt, Lennart — Philips Lighting

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

A PD has three different parameters that govern it's maximum DC average power consumption, with precendence for the lesser value in this order:
- P_Autoclass_PD
- PDMaxPowerValue
- PClass_PD

A successful DLL negotiation disables the P_Autoclass_PD limit.

The input average power exceptions currently do not take PDMaxPowerValue into account.

In 145.3.8.2 we should cluster all of the PD power requirements (Autoclass currently sits in 145.3.6.2).

*SuggestedRemedy*

- Change:
"For single-signature PDs assigned to Class 6 or Class 8, when additional information ..."
to:
"For single-signature PDs assigned to Class 6 or Class 8, and PDMaxPowerValue set to 510 or above 712, when additional information..."

- Change:
"For dual-signature PDs assigned to Class 5, when additional information ..."
to:
"For dual-signature PDs assigned to Class 5 and a PDMaxPowerValue_mode(X) set above 355, when additional information ..."

- In 145.3.8.2 (line 26) change:
"The maximum average power, P Class_PD or P Class_PD-2P in Table 145-29 or PDMaxPowerValue in 145.5.3.3.3, including any peak power drawn per 145.3.8.4 is averaged over a 1 second sliding window."
to:
"The maximum average power, P Class_PD or P Class_PD-2P in Table 145-29, or PDMaxPowerValue in 145.5.3.3.3, **or P_Autoclass_PD in 145.3.6.2**, including any peak power drawn per 145.3.8.4 is averaged over a 1 second sliding window."

- Append new paragraph to 145.3.8.2:
"The PD shall not draw more power than P Autoclass_PD, unless the PD successfully negotiates a higher power level, up to the PD requested Class, through Data Link Layer classification as defined in 145.5."

- Replace on page 196-197, line 54:
"The PD shall not draw more power than P Autoclass_PD at any point until V PD falls below V Reset_PD max , unless the PD successfully negotiates a higher power level, up to the PD requested Class, through Data Link Layer classification as defined in 145.5."
by:
"The PD is restricted to a maximum power draw of P Autoclass_PD until the PD successfully negotiates a higher power level through Data Link Layer classification as defined in 145.5."

*Proposed Response* *Response Status* **O**

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*Cl* **145** *SC* **145.3.8.4** *P* **203** *L* **39** # r01-240

Yseboodt, Lennart — Philips Lighting

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

"These equations may be used to calculate P Peak_PD or P Peak_PD-2P for Data Link Layer classification by substituting P Class_PD or P Class_PD-2P with PDMaxPowerValue or PDMaxPowerValue_mode(X) and for Autoclass by substituting P Class_PD with PAutoclass_PD."

Old text combined with new equations = confusion.

The equations redefine PPeak_PD based on PDMaxPowerValue.

*SuggestedRemedy*

Replace text by:
"These equations may be used to calculate P Peak_PD or P Peak_PD-2P after Data Link Layer classification and for Autoclass by substituting PDMaxPowerValue with PAutoclass_PD."

*Proposed Response* *Response Status* **O**

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*Cl* **145** *SC* **145.3.8.4.1** *P* **204** *L* **14** # r01-241

Yseboodt, Lennart — Philips Lighting

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

Subclause 145.3.8.4.1 refers to PPort_PD_max to refer to maximum PD power under the conditions in 145.3.8.2.1.
This is hard to deduce.

*SuggestedRemedy*

Append sentence at the end: "PPort_PD max refers to the maximum power draw as permitted by 145.3.8.2.1".

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8.6** *P* **204** *L* **25** # r01-242

Yseboodt, Lennart — Philips Lighting

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

During the last meeting it was identified that "Source resistance" and "Source current" are ambiguous and require re-simulation of the transient requirements.

*SuggestedRemedy*

Adopt yseboodt_04_0117_pdtransients.pdf

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8.9** *P* **205** *L* **26** # r01-243

Yseboodt, Lennart — Philips Lighting

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

"The maximum pair current in a system depends on the assigned Class (see 145.3.6), and is defined in Table 145-17."
Reference to Table is wrong.

*SuggestedRemedy*

Change to:
"The maximum pair current in a system depends on the assigned Class (see 145.3.6), and is defined in Table 145-31."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8.9** *P* **205** *L* **26** # r01-244

Yseboodt, Lennart — Philips Lighting

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

Table 145-31 (Maximum pair-to-pair current unbalance) is the duplicate of 145-17 for the PD section.
Some modifications are needed to make it work here.

*SuggestedRemedy*

1. ICon is not a parameter known to the PD. Replace ICon by "PClass_PD / VPD"
2. Add a footnote to assigned Class "1 to 4" that says
"There is no maximum unbalance current requirement for these assigned Classes."
3. By duplicating the Table we get a duplicate parameter name.
Even though the values are the same, we should give them proper names.
Rename I_Unbalance-2P to I_Unbalance_PD-2P in subclause 145.3.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8.9** *P* **205** *L* **32** # r01-245

Yseboodt, Lennart — Philips Lighting

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

In Table 145-31 the column header "Value" does not convey IUnbalance_PD-2P is a maximum current.

*SuggestedRemedy*

Change header to "Max".

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8.9** *P* **206** *L* **25** # r01-246

Yseboodt, Lennart — Philips Lighting

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

"Single-signature PDs shall not exceed I Unbalance-2P for longer than T CUT min and 5 % duty cycle, and shall not exceed I Peak-2P-unb , as defined in Equation (145-12) on any pair"

This links back to a PSE parameter in the PD section. We are now able to clean that up because we have local PD unbalance numbers.

Note: values are I_LIM-2P minus 2mA.

*SuggestedRemedy*

- To Table 145-31, add new parameter I_Unbalance_peak-2P:

| Assigned Class | Value |
|---|---|
| 1 to 4 | PPeak_PD / VPD |
| 5 | 0.56 |
| 6 | 0.7 |
| 7 | 0.827 |
| 8 | 0.994 |

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8.9** *P* **207** *L* **18** # r01-247

Yseboodt, Lennart Philips Lighting

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

In Figure 145-31 the arrows for the currents are missing, they are drawn in the PSE section.

*SuggestedRemedy*

Add current arrows.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.9** *P* **208** *L* **5** # r01-248

Yseboodt, Lennart Philips Lighting

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

"A PD shall meet the T MPS_PD requirement with a series resistance representing the worst case cable resistance between the measurement point and the PD PI."

We can specify what this worst-case value is, making this shall less open for interpretation.

*SuggestedRemedy*

Change to:
"A PD shall meet the T MPS_PD requirement with a series resistance of R_Ch, which represents the worst case cable resistance between the measurement point and the PD

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.4.9** *P* **217** *L* **51** # r01-249

Yseboodt, Lennart Philips Lighting

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

"For a 10GBASE-T midspan PSDs, in meeting either of the above requirements, the Midspan PSE may be substituted for up to two connection pairs in the FD."

I guess PSDs needs to be PSE ?

*SuggestedRemedy*

Change to:
"For a 10GBASE-T midspan PSE, in meeting either of the above requirements, the Midspan PSE may be substituted for up to two connection pairs in the FD."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5** *P* **222** *L* **28** # r01-250

Yseboodt, Lennart Philips Lighting

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

There is a basic timing issue in DLL power negotiations which is currently not addressed.

When a PD negotiates power DOWN:
- it must conform to the newly requested power immediately as the requests goes out (through pd_max_power)
- it must wait for the PSE to be in sync before it triggers power update (otherwise it can flip to lower MPS current before the PSE is ready for it)

When a PD negotiates power UP:
- it must wait for the PSE to be in sync before changing pd_max_power
- it must immediately trigger power update to conform to potentially higher MPS requirements as the request goes out

*SuggestedRemedy*

This issue, as well as the Autoclass DLL issue is addressed in yseboodt_05_0117_dllautoclass.pdf.

Adopt yseboodt_05_0117_dllautoclass.pdf

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5** *P* **222** *L* **28** # r01-251

Yseboodt, Lennart — Philips Lighting

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

There is a basic conflict between DLL power negotiation and Autoclass.
This is what happens:

CC, Detect, Class happens. An initial Class is assigned and power allocated. Assume the PD requests Autoclass
The PSE performs the Autoclass measurement and based on this reduces the power budget.
DLL is initialized
Per the DLL state diagrams, the PSE uses a PSE_INITIAL_VALUE based on the assigned Class.
At this point the Autoclass optimization is forgotten... after all, whatever power the PSE puts in PSEAllocatedPowerValue is the amount of power the PSE guarantees at the PD PI.

The same happens when DLL Autoclass is used, right after the measurement, the result is invalidated because the value in PSEAllocatedPowerValue prevails.
The root cause of this is that DLL always requires both PSE and PD to negotiate to some value. The whole point of Autoclass is that neither party necessarily knows about cable resistance and power at the PD PI.

We need a way to indicate at DLL level that Autoclass is being used and that the normal DLL operation is suspended.
Ideally what I would want is that a PD or PSE can, at any time, switch out of this mode and go back to "normal" power allocation.
Thus, I would suggest that we take a magic number for the PDRequestedPowerValue and PSEAllocatedPowerValue fields that indicates that the power allocation = the most recent Autoclass power.
A logical value for this would be 0xACAC.

So, what would happen after a Physical Layer Autoclass is that the PD initializes with a PDRequestedPowerValue=0xACAC which indicates Autoclass.
The PSE, if it supports Autoclass, would use PSEAllocatedPowerValue=0xACAC.
If it doesn't, the PSE can set PSEAllocatedPowerValue to the assigned Class.

This way, a PD that operates under Autoclass, is able to 'renegotiate' to a fixed PD PI value, and then later on even redo Autoclass using DLL.

*SuggestedRemedy*

Adopt yseboodt_05_0117_dllautoclass.pdf

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5** *P* **222** *L* **33** # r01-252

Yseboodt, Lennart — Philips Lighting

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

"Single-signature PDs advertising a Class 4 signature or higher and dual-signature PDs that request Class 4 or higher on either Mode support Data Link Layer classification (see 145.3.6)."

We actually manage to be inconsistent within the same sentence... (class signature vs request Class)

*SuggestedRemedy*

Replace by:
"Single-signature PDs that request Class 4 or higher and dual-signature PDs that request Class 4 or higher on either Mode support Data Link Layer classification (see 145.3.6)."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.2** *P* **222** *L* **52** # r01-253

Yseboodt, Lennart — Philips Lighting

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

This is last occurance of "state variable" (another one in the PICS related to this one).

"PDs shall set the state variable pd_dll_ready within 5 minutes of Data Link Layer classification being enabled in a PD as indicated by the variable pd_dll_enable (145.3.3.4, 145.3.3.9, and 145.5.3.3.3)."

*SuggestedRemedy*

Replace "the state variable" by "the variable".

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3** *P* **223** *L* **13** # r01-254

Yseboodt, Lennart Philips Lighting

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

The way the subclauses are ordered in 145.5.3 (DLL state diagrams) no longer makes sense with the particular implementation of DLL we have adopted in the last cycle.
Right now everything is structured with single-signature vs dual-signature as the top branch.

*SuggestedRemedy*

Restructure 145.5.3 such that:
- The top branch is PSE and PD
- Subdivide PD into single-signature and dual-signature
- Create a single mapping Table for PSEs with ALL the variables (the regular ones and the _alt(X) ones)
- Merge the variable lists for the PSE
- Create two mapping Tables for PDs (one for single-signature and one of dual-signature)
- Remove the construct _alt(X=A) or _mode(X=B) from the dual-signature mapping table, replace by _alt(A) or _mode(B).

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.3.1** *P* **225** *L* **25** # r01-255

Yseboodt, Lennart Philips Lighting

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

Values for pse_initial_value are incorrect (should match PClass_PD).

*SuggestedRemedy*

- For pse_allocated_pwr=6, change pse_initial_value to 510
- For pse_allocated_pwr=8, change pse_initial_value to 713

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.3.1** *P* **226** *L* **28** # r01-256

Yseboodt, Lennart Philips Lighting

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

Function pse_power_review does not follow the convention that functions start with do_.

*SuggestedRemedy*

Rename pse_power_review to do_pse_power_review in Clause 145.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.4.1** *P* **228** *L* **37** # r01-257

Yseboodt, Lennart Philips Lighting

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

Values for pd_dllmax_value are incorrect (should match PClass_PD for Class 6)

*SuggestedRemedy*

- For pd_req_class=6, change pd_dll_max_value to 510

Class 8 is OK.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.4.2** *P* **229** *L* **1** # r01-258

Yseboodt, Lennart Philips Lighting

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

Wrong 'valid values' for MirroredPDRequestedPowerValueEcho and MirroredPSEAllocatedPowerValue "Values: 1 through 999"

These are incoming fields that can be zero.

*SuggestedRemedy*

Change both to "Values: 0 through 999"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.4.2** *P* **229** *L* **32** # r01-259

Yseboodt, Lennart Philips Lighting

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

Missing 'valid values' for variable PDMaxPowerValue.

*SuggestedRemedy*

Add "Values: 1 through 999" to PDMaxPowerValue.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.4.2** *P* **229** *L* **36** # r01-260
Yseboodt, Lennart Philips Lighting

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

Missing 'valid values' for variable PDRequestedPowerValue.

*SuggestedRemedy*

Add "Values: 0 through pd_dllmax_value" to PDRequestedPowerValue.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.4.2** *P* **229** *L* **40** # r01-261
Yseboodt, Lennart Philips Lighting

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

Wrong valid values for PDRequestedPowerValue_mode(X): "Values: 0 through 499"
This is the single-signature PD DLL state diagram, the requested value for _mode(X) can only be zero.

*SuggestedRemedy*

- Change to: "Values: 0"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.4.2** *P* **230** *L* **2** # r01-262
Yseboodt, Lennart Philips Lighting

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

Values for pd_initial_value are incorrect (should match PClass_PD)

*SuggestedRemedy*

- For pd_max_power=6, change pd_initial_value to "<=510"
- For pd_max_power=8, change pd_initial_value to "<=713"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.4.2** *P* **230** *L* **8** # r01-263
Yseboodt, Lennart Philips Lighting

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

Wrong valid values for PSEAllocatedPowerValueEcho: "Values: 1 through 999"

*SuggestedRemedy*

Change to "Values: 0 through 999"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.4.2** *P* **230** *L* **15** # r01-264
Yseboodt, Lennart Philips Lighting

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

Wrong valid values for TempVar: "Values: 1 through 999"
Must match valid range of MirroredPSEAllocatedPowerValue.

*SuggestedRemedy*

Change to: "Values: 0 through 999"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.4.4** *P* **231** *L* **10** # r01-265
Yseboodt, Lennart Philips Lighting

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

Function pd_power_review does not follow the convention that functions start with do_.

*SuggestedRemedy*

Rename pd_power_review to do_pd_power_review in Clause 145.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.4.4** *P* **231** *L* **14** # r01-266
Yseboodt, Lennart Philips Lighting

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

Spurious newline after pd_new_value:

*SuggestedRemedy*

Fix.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.4.5** *P* **233** *L* **3** # r01-267

Yseboodt, Lennart Philips Lighting

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

"!pd_dll_ready"

Entry arc into INITIALIZE should be "!pd_dll_enable + !pd_dll_ready" to match with other DLL state diagrams.

*SuggestedRemedy*

Change to: "!pd_dll_enable + !pd_dll_ready"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.4.5** *P* **233** *L* **23** # r01-268

Yseboodt, Lennart Philips Lighting

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

The exit branch from REQUEST to IDLE has the "+" at the start of the next line.

*SuggestedRemedy*

Move the "+" to the end of the line above.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.5** *P* **233** *L* **33** # r01-269

Yseboodt, Lennart Philips Lighting

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

In Table 145-41 we find the mappings between state diagram variables and Clause 30 objects.
For dual-signature, we've used the notation "PDRequestedPowerValueEcho_alt(X=A)" to indicate we refer to variable PDRequestedPowerValueEcho_alt(A).

Given that we now also use "P" as a variable pointing to the active state diagram, this notation no longer feels right.

*SuggestedRemedy*

Replace in Table 145-41 every instance of "(X=A)" with "(A)" and "(X=B)" with "(B)".

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.5** *P* **233** *L* **41** # r01-270

Yseboodt, Lennart Philips Lighting

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

Table 145-41 has mapping from non-existing variable pse_dll_ready_alt(X) to non-existing state diagram object aLldpXdot3LocReadyA / aLldpXdot3LocReadyB.

*SuggestedRemedy*

Remove this mapping.
Another comment re-structures these tables as part of a DLL re-shuffle, Editor to verify one and only one mapping exists for pse_dll_ready.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.5** *P* **233** *L* **51** # r01-271

Yseboodt, Lennart Philips Lighting

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

Table 145-41 has mapping from non-existing variable pd_dll_ready_mode(X) to non-existing state diagram object aLldpXdot3LocReadyA / aLldpXdot3LocReadyB.

*SuggestedRemedy*

Remove those lines and replace by mapping:
aLldpXdot3LocReady <= pd_dll_ready

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.6.2** *P* **234** *L* **46** # r01-272

Yseboodt, Lennart Philips Lighting

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

The introductory text for "145.5.3.6.2 Variables" only refers to "X" as being a variable parameter.
We should also mention "P" which was added at D3.0.
Also the reference to 145.3.3 can now be made to the DLL specific 145.5.3.6.1.

*SuggestedRemedy*

Change the text as follows:
"XXThe PSE power control state diagram (Figure 145-39) uses "_alt(X)" , which is defined in 145.3.3, and the following variables:XX

Dual-signature PSEs provide the behavior of the state diagram shown in Figure 145-39 over each pairset independently unless otherwise specified. All the parameters that apply to Alternative A and Alternative B are denoted with the suffix "_alt(X)" where "X" can be "A" or "B", or "_alt(P)" where "P" can be "A" or "B", as defined in 145.5.3.6.1. A parameter that ends with the suffix "_alt(X)" may have different values for Alternative A and Alternative B.

**The PSE power control state diagram (Figure 145-39, Figure 145-40, Figure 145-43, and Figure 145-44) uses the following variables:**"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.6.2** *P* **235** *L* **45** # r01-273

Yseboodt, Lennart Philips Lighting

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

Values of pse_initial_value_alt(X) are incorrect, should match PClass_PD.

*SuggestedRemedy*

- For pse_allocated_pwr_pri/sec=5 change pse_initial_value_alt(X) to 356

- Replace "pse_allocated_pwr_mode_pri/sec" to "pse_allocated_pwr_pri/sec"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.7.2** *P* **239** *L* **32** # r01-274

Yseboodt, Lennart Philips Lighting

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

Values of pd_dll_max_value_mode(X) is incorrect, should match PClass_PD.

*SuggestedRemedy*

- For pd_req_class_mode(X)=5 change pd_dll_max_value_mode(X) to 356

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.7.3** *P* **239** *L* **35** # r01-275

Yseboodt, Lennart Philips Lighting

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

The introductory text for "145.5.3.7.3 Variables" only refers to "X" as being a variable parameter.
We should also mention "P" which was added at D3.0.
Also the reference to 145.3.3 can now be made to the DLL specific 145.5.3.7.1.

*SuggestedRemedy*

Change text as follows:
"XXThe PD power control state diagram (Figure 145-41) use "_mode(X)", which is defined in 145.3.3, and the following variables:XX

**Dual-signature PDs provide the behavior of the state diagram shown in Figure 145-45 over each pairset independently unless otherwise specified.
All the parameters that apply to Mode A and Mode B are denoted with the suffix "_mode(X)" where "X" can be "A" or "B", or "_mode(P)" where "P" can be "A" or "B", as defined in 145.5.3.7.1. A parameter that ends with the suffix "_mode(X)" may have different values for Mode A and Mode B.

The PD power control state diagram (Figure 145-45 and Figure 145-46) use the following variables:**"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.7.3** *P* **240** *L* **10** # r01-276

Yseboodt, Lennart Philips Lighting

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

Wrong valid values for PDRequestedPowerValue_mode(X): "Values: 0 through 499".
These must be bound by pd_dllmax_value_mode(X).

*SuggestedRemedy*

Replace by: "Values: 0 through pd_dllmax_value_mode(X)"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.7.3** *P* **240** *L* **25** # r01-277

Yseboodt, Lennart Philips Lighting

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

Values of pd_max_power_mode(X) should match PClass_PD.

*SuggestedRemedy*

- For pd_max_power_mode(X)=5 change pd_initial_value_mode(X) to 356.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.4** *P* **244** *L* **27** # r01-278

Yseboodt, Lennart Philips Lighting

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

Table 145-43 uses in Title and header "_alt(X)", but this is about the PD.

*SuggestedRemedy*

Change both occurances to "_mode(X)".

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.6.1** *P* **246** *L* **50** # r01-279

Yseboodt, Lennart Philips Lighting

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

"A dual-signature PD that is switched from 4-pair to 2-pair mode requests the amount of power it needs for 2- pair operation in the PDRequestedPowerValue variable. Per Annex 145-43 this is the requested power for the active Mode."

That should be Table 145-43, not Annex.

*SuggestedRemedy*

Change Annex 145-43 to Table 145-43.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.7.3.2** *P* **254** *L* **12** # r01-280

Yseboodt, Lennart Philips Lighting

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

PICS PSE11 contains spurious period before "PD".

*SuggestedRemedy*

Remove period.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.7.3.2** *P* **255** *L* **10** # r01-281

Yseboodt, Lennart Philips Lighting

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

"PSE28 PD_4pair_cand default value"
Variable name should not be capitalized.

*SuggestedRemedy*

Change to:
"PSE28 pd_4pair_cand default value"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.7.3.2** *P* **257** *L* **24** # r01-282

Yseboodt, Lennart — Philips Lighting

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

"PSE55 In theCLASS_RESET, CLASS_RESET_PRI or CLASS_RESET_SEC state"
Sentence is missing space.

*SuggestedRemedy*

Change to:
"PSE55 In the CLASS_RESET, CLASS_RESET_PRI or CLASS_RESET_SEC state"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.7.3.2** *P* **257** *L* **32** # r01-283

Yseboodt, Lennart — Philips Lighting

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

"pd_auotclass TRUE when PSE reaches POWER_ON state"
Misspelled variable.

*SuggestedRemedy*

Change to:
"pd_autoclass TRUE when PSE reaches POWER_ON state"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.7.3.2** *P* **264** *L* **7** # r01-284

Yseboodt, Lennart — Philips Lighting

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

"PD45 Input average powerexceptions for Class 6 and Class 8single-signature PDs"
Two spaces missing.

*SuggestedRemedy*

Change to:
"PD45 Input average power exceptions for Class 6 and Class 8 single-signature PDs"

*Proposed Response* *Response Status* **O**

*Cl* **145A** *SC* **145A.5** *P* **278** *L* **44** # r01-285

Yseboodt, Lennart — Philips Lighting

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

"(e.g. V f1 ? V f3 ).The common mode"

Missing space.

*SuggestedRemedy*

Add space.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.5.1** *P* **166** *L* **44** # r01-286

Zimmerman, George — Aquantia, ADI, Comm

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

"The PSE PI connector (jack) when mated with a specified balanced cabling connector (plug) shall meet the requirements of 145.2.8.5.1." - this is nonsensical. There is actually only one other requirement listed in 145.2.8.5.1, and I believe the intent is that that requirement should be stated so that it applies when the PSE PI is mated to a connector.

*SuggestedRemedy*

delete page 166, lines 44-45 (the quoted sentence in the comment), and insert new sentence after the sentence ending on line 30 of page 167 (sentence begins on line 29 "A PSE shall not source..."), new sentence to read ""This unbalance current requirement applies at the PSE PI connector (jack) when mated with a specified balanced cabling connector (plug)."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8.9** *P* **205** *L* **50** # r01-287

Zimmerman, George — Aquantia, ADI, Comm

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

"The PD PI connector (jack) when mated with a specified balanced cabling connector (plug) shall meet the requirements of 145.3.8.9" - this is nonsensical. This is a dual of a comment on 145.2.8.5.1. There is actually only one other requirement (one for single-sig, and the same for dual-sig) listed in 145.3.8.9 and I believe the intent is that that requirement should be stated so that it applies when the PD PI is mated to the specified balanced cabling connector.

*SuggestedRemedy*

delete page 205 lines 50-51 (the quoted sentence in the comment), and insert new paragraph after the sentence ending on line 34 of page 206 (previous paragraph begins on line 29 "Dual-signature PDs shall not exceed..."), new paragraph to read ""The unbalance current requirement for both single-signature and dual-signature PDs applies at the PD PI connector (jack) when mated with a specified balanced cabling connector (plug)."

*Proposed Response* *Response Status* **O**

*Cl* **1** *SC* **1.4.418ac** *P* **25** *L* **35** # r01-288

Zimmerman, George — Aquantia, ADI, Comm

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

Definition of Type 4 PD doesn't work for dual-signature PDs.

*SuggestedRemedy*

Change 1.4.418aa and 1.4.418ac to read:

1.4.418aa Type 3 PD: A single-signature PD that requests Class 1 to Class 6, or a dual-signature PD that requests Class 1 to Class 4 on both Modes during Physical Layer classification. Additionally, the PD implements Multiple-Event classification, and accepts power on both Modes simultaneously. (See IEEE 802.3, Clause 145).

1.4.418ac Type 4 PD: A single-signature PD that requests Class 7 or Class 8, or a dual-signature PD that request Class 5 on at least one Mode during Physical Layer classification. Additionally, the PD implements Multiple-Event classification, is capable of Data Link Layer classification, and accepts power on both Modes simultaneously. (See IEEE 802.3, Clause 145).

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.1** *P* **199** *L* **49** # r01-289

RAN, ADEE — Intel Corporation

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

Three subclauses (this one, 145.2.5.2, and 145.5.3.1) define conventions for state diagrams, which are all the same.

It may be more clear for readers to have one subclause for conventions under 145.1, instead of having multiple "conventions" subclauses.

*SuggestedRemedy*

Move the content of 145.2.5.2 to a new subclause 145.1.5.

Refer to that subclause in 145.2.5, in 145.3.3, and in 145.5.3.

Delete 145.2.5.2, 145.3.3.1, and 145.5.3.1.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.3** *P* **110** *L* **4** # r01-290

RAN, ADEE — Intel Corporation

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

This subclause seems to be an elaboration of the content of 145.2.2. If so, it should be hierarchically positioned under it.

*SuggestedRemedy*

Make this subclause 4th-order so that it becomes 145.2.2.1.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.4** *P* **117** *L* **1** # r01-291

RAN, ADEE — Intel Corporation

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

This subclause it titled "PI pin assignments" but it also defines alternatives and has normative requirements about them, so it's not just pin assignments.

The parallel subclause for the PI is titled "PD PI".

*SuggestedRemedy*

Rename this subclause "PSE PI".

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.2** *P* **100** *L* **1** # r01-292

RAN, ADEE Intel Corporation

*Comment Type* **G** *Comment Status* **X**

The text in this subclause is equivalent to what was already written in the last paragraph of 145.3.3:

'All the parameters that apply to Mode A and Mode B are denoted with the suffix "_mode(X)" where "X" can be "A" or "B". A parameter that ends with the suffix "_mode(X)" may have different values for Mode A and Mode B in the independent state diagrams.'

Unless there is some other information (which I can't see), this repetition is unnecessary and may confuse readers.

*SuggestedRemedy*

Delete this subclause.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.3** *P* **200** *L* **14** # r01-293

RAN, ADEE Intel Corporation

*Comment Type* **G** *Comment Status* **X**

Subclauses 145.3.3.3 through 145.3.3.7 discuss single-signature PDs.

Subclauses 145.3.3.4 through 145.3.3.12 are the equivalent of the above for dual-signature PDs.

It would be friendlier for readers (who may be interested in only one kind of PDs) to separate these clauses hierarchically. It would also be consistent with the similar structure of 145.5.3.

*SuggestedRemedy*

Create a subclause hierarchy as follows:

145.3.3.3 Single-signature PD state diagrams
145.3.3.3.1 Constants
145.3.3.3.2 Variables
145.3.3.3.3 Timers
145.3.3.3.4 Functions
145.3.3.3.5 State diagram
145.3.3.4 Dual-signature PD state diagram
145.3.3.4.1 Constants
145.3.3.4.2 Variables
145.3.3.4.3 Timers
145.3.3.4.4 Functions
145.3.3.4.5 State diagram

Consider also moving the following text from 145.3.3:

"Single-signature PDs shall provide the behavior of the state diagram shown in Figure 145-26 and Figure 145-27" - to the new 145.3.3.3 (and change to "diagrams" per other comment)

"Dual-signature PDs (...)" (the whole second paragraph) to the new 145.3.3.4.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3** *P* **198** *L* **49** # r01-294

RAN, ADEE Intel Corporation

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

The title is "PD state diagram" and the text mentions a diagram, but there are three state diagrams.

*SuggestedRemedy*

Change the title to "PD state diagrams".

Also change "diagram" to "diagrams" in the first paragraph (the second paragraph is fine).

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.12** *P* **189** *L* **1** # r01-295

RAN, ADEE Intel Corporation

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

For this case there is only one state diagram.

*SuggestedRemedy*

Change "diagrams" to "diagram".

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **138** *L* **3** # r01-296

RAN, ADEE Intel Corporation

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

This diagram uses an empty pentagon to denote a transition from a state on another page, where the "to" arrows include the state name.

This notation does not have precedence in other state diagrams (according to a non-thorough search).

The corresponding state diagram in clause 33 uses letters inside pentagons for both "from" and "to" directions. This is the common convention in other clauses I know.

Introducing a new graphical convention without explanation is may be confusing for readers.

This also applies to the Single-signature PD state diagram in 145.3.3.7.

*SuggestedRemedy*

Revert to the common convention of including the same identifier in both "from" and "to" pentagons (using state names instead of single letters is okay).

Alternatively, add text in the "conventions" subclause to describe this new convention.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.4** *P* **216** *L* **38** # r01-297

RAN, ADEE Intel Corporation

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

The signature requirements from a PD are stated in great detail before the concept of signature is introduced (P217 L1).

For non-expert readers, this may be difficult to understand.

I am aware that this subclause structure is based on 33.3.4; It would be good to also change that subclause in maintenance.

*SuggestedRemedy*

Move the text starting from "The detection signature is a resistance calculated" and ending with "the characteristics in Table 145-22" (inclusive) to the beginning of this subclause.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.4** *P* **214** *L* **17** # r01-298

RAN, ADEE Intel Corporation

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

I think a PD must not present a detection signature outside of the limits in the table, regardless of the reason (for example, it must also not happen when a PD tries to avoid detection).

Therefore, "that requests power" is an unneeded limitation.

The corresponding text in 33.3.4 is stated differently, and can be used instead.

*SuggestedRemedy*

Change from
"A PD that requests power by presenting"
to
"A PD that presents"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.6.1** *P* **224** *L* **4** # r01-299

RAN, ADEE Intel Corporation

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

The newly inserted text about hysteresis is stated in weasel-words. "is required to" sounds like a normative statement.

If it is a normative requirement then it should include a "shall" and a definition of what hysteresis is appropriate (which would enable judging for compliance).

Also, there may be ways other than hysteresis to avoid erroneous transitions.

As it stands, this seems to be a recommendation (which makes sense), so it should be stated as a recommendation.

*SuggestedRemedy*

Change
"Appropriate hysteresis in the VMark_th threshold voltage is required to avoid erroneous transitions"

to
"Implementations should employ appropriate methods (such as hysteresis in VMark_th) to avoid erroneous transitions"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.7.2** *P* **175** *L* **32** # r01-300

RAN, ADEE Intel Corporation

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

Since Autoclass is optional it would be good to have the subclause heading state that. This is commonly done in the high-speed PHY clauses (see for example 83.5.9).

Also holds for 145.3.6.2 (PD autoclass).

*SuggestedRemedy*

Append "(optional) to the headings of subclauses 145.2.7.2 and 145.3.6.2.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8** *P* **224** *L* **50** # r01-301

RAN, ADEE Intel Corporation

*Comment Type* **G** *Comment Status* **X**

"PD power" seems not to be good heading for this subclause, since it deals also with voltage, currents, slew rates, etc.

However I'm not sure what the title should be.

*SuggestedRemedy*

Consider changing to a better title.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.4.9** *P* **250** *L* **47** # r01-302

RAN, ADEE Intel Corporation

*Comment Type* **G** *Comment Status* **X**

(After 'If the existing FD configuration is of the "Cross-connect model" type, the Midspan PSE')

The phrase "needs to" was changed to "can". Both are not clear standard language.

According to the style manual, "can" is equivalent to "is capable of", which seems inappropriate here. I think it should be a "may".

In addition, the "shall" in the next statement is now the only normative requirement; so the "In addition" is inappropriate.

*SuggestedRemedy*

Change "can be" to "may be".

Change
"In addition, the installation of a Midspan PSE shall"
to
"An installation of a Midspan PSE shall"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5** *P* **256** *L* **53** # r01-303

RAN, ADEE Intel Corporation

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

The second paragraph of 145.5 seems to belong to 145.5.1 TLV frame definition.

*SuggestedRemedy*

Move this paragraph to the end of 145.5.1.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3** *P* **257** *L* **36** # r01-304

RAN, ADEE Intel Corporation

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

"diagram" was changed to "diagrams" in the previous paragraph, but this paragraph still has "diagram" referring to two different diagrams, twice.

Also, figure 145-42 (as numbered in the clean document) seems to deal with Autoclass, which is optional. Is the "shall" appropriate for it too? Is there a parallel requirement for Dual-signature PD? (I am not sure about this)

*SuggestedRemedy*

Change "diagram" to "diagrams" twich in the second paragraph.

Consider what to do with the Autoclass state diagram.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.3.1** *P* **258** *L* **46** # r01-305

RAN, ADEE Intel Corporation

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

Why is information about a single variable stated before the list instead of at this variable's description?

Also applicable in 145.5.3.4.1, 145.5.3.4.2, 145.5.3.6.2, 145.5.3.7.2, and 145.5.3.7.3

*SuggestedRemedy*

In the definition of pse_initial_value, insert after the first sentence:
"The value is quantized to fit the available resolution. Additional information on power levels for Classes 6 and 8 may be found in 145.3.8.2.1."

Delete the first paragraph of 145.5.3.3.1.

Apply appropriate changes similarly in the other places indicated in the comment.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.3** *P* **258** *L* **41** # r01-306
RAN, ADEE Intel Corporation

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

The field is in the TLV, which is a part of the LLDPDU. It is not a field of the LLDPDU.

Also in 145.5.3.6.

*SuggestedRemedy*

Change "the corresponding LLDPDU field" to "the corresponding Power via MDI TLV field".

Change 145.5.3.6 in a similar manner.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.6.1** *P* **274** *L* **3** # r01-307
RAN, ADEE Intel Corporation

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

Typo: "It's" should be "Its".

Also in 145.5.3.7.1, P281 L14.

*SuggestedRemedy*

Change per comment.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.6.2** *P* **274** *L* **16** # r01-308
RAN, ADEE Intel Corporation

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

The previous paragraph ends with "the following variables:" so the list of variables should appear right after it.

But instead, we get this paragraph, which seems out of place.

*SuggestedRemedy*

Move this paragraph (staring with "Dual-signature PSEs") to be the first paragraph in this subclause.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.6** *P* **290** *L* **8** # r01-309
RAN, ADEE Intel Corporation

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

"The PSE and PD utilize the LLDPDUs"

LLDPDUs are data blocks sent over the LLDP protocol. They contain many other things, not just PSE and PD stuff.

It would be more adequate to refer to the Power over MDI TLV, or alternatively to the LLDP protocol.

Also, a cross-reference would be useful.

*SuggestedRemedy*

Change "utilize the LLDPDUs" to either:
"Utilize the Power over MDI TLV (See 79.3.2)"
or
"Use the LLDP protocol (See Clause 79)"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.7.2.4** *P* **296** *L* **19** # r01-310
RAN, ADEE Intel Corporation

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

Item "*MID" has status "O/1" which means it is mutually exclusive with item "*CL" (per 21.6.2 definition: "one and only one of the group of options labeled by the same numeral <n> is required"

Is Midspan PSE incompatible with "Implementation supports Physical Layer classification"?

From reading the corresponding subclauses, 145.2.3 and 145.2.7, it isn't clear to me why this is so.

I suspect that the table is garbled and there should be mutually exclusive items for alternative A and alternative B (which currently does not appear at all), while Physical layer classification is simply optional.

*SuggestedRemedy*

Edit the PICS item list to make it correct.

If there is indeed a reason for this mutual exclusion, include clear statements in the referenced subclauses.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.7.3.1** *P* **297** *L* **8** # r01-311

RAN, ADEE Intel Corporation

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

Thankfully, the compatibility considerations in 145.1.1 are not stated as a mandatory requirement any more.

*SuggestedRemedy*

Delete item COM1.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **142** *L* **6** # r01-312

Peker, Arkadiy Microsemi Corporation

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

This comment is marked CLASS_PROB_PRI_1.
Wrong and impossible logic of pse_avail_pwr_pri >= 4) in the exit from CLASS_PROBE_PRI to IDLE_PRI if the input to CLASS_PROBE_PRI is only allowed for pse_avail_pwr_pri < 4 per the current option_class_probe definition. The option_class_probe definition is good for single-signature PD but cannot be used in the dual-signature part of the PSE state machine per the current implementation of the CLASS_PROBE_PRI exit logics.

*SuggestedRemedy*

1. In the exit from CLASSIFICATION_PRI to CLASS_PROBE_PRI, replace option_class_probe with option_class_probe_pri.
2. Add new variable option_class_probe_pri to the variable list with the following definition:
"option_class_probe_pri
This variable indicates if the PSE should determine the PD requested Class on the Primary Alternative by issuing 3 class events. When set to TRUE, the PSE will issue 3 class events to determine the PD requested Class, perform a classification reset by applying VReset for at least TReset to the PI (see Table 145-14), followed by a normal classification procedure.
Values:
FALSE: The PSE will not probe for the PD requested Class.
TRUE: The PSE probes for the PD requested Class."
3. Repeat the solution for the secondary.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **142** *L* **3** # r01-313

Peker, Arkadiy Microsemi Corporation

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

This comment is marked CLASS_PROB_PRI_2.
It is not clear why we used single option_class_probe for both primary and secondary with dual-signature and for single-signature. Few issues:
a) What if the available power will be <4 for the primary alternative and the available power >4 for the secondary?
b) the usage of option_class_probe for single-signature and dual-signature is not exactly the identical.
Therefore, the option_class_probe need to be separate for primary and secondary like in any other parameter in the spec for dual-signature that deals with class and power.

*SuggestedRemedy*

Adopt the propose remedy to the comment marked CLASS_PROB_PRI_1. [It resolves both comment marked CLASS_PROB_PRI_1 and comment is marked CLASS_PROB_PRI_2.]

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.7** *P* **184** *L* **30** # r01-314

Peker, Arkadiy Microsemi Corporation

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

PD state machine (and any other state machine) doesn't need to contain states to describe uncompliant behavior. We have infinite numbers of them.
-If PD PI voltage is drop due to overload or short circuit, this PD is not compliant since the PD is required to limit its power consumption to PClass_PD by design.
-If PSE PI voltage is drop for a duration longer than allowed by the transient spec, it is non-compliant PSE.
As a result, falling below VPD<VOff_PD while PD was powered is non-compliant behavior.
-This behavior should not be described in the PD state machine.
-Specifically, if this behavior cause violation of other requirements in the spec, it should be avoided or corrected.
-The need to cover in the PD state machine legacy PD behavior and newly designs of 802.3bt is understood but we should not force this behavior on compliant PDs and at least make it optional.
Having the NOPOWER state route creates new non-compliant behavior such
1) Violation of tpowerdelay_timer when going from POWER_DELAY to NOPOWER.
2) Possible overload condition due to the assignment of (pse_power_level <== 8)
(Compliant PDs doesn't have this problem.
It is suggested to delete the NOPOWER state or to make the inputs to it selectable by the implementer.

*SuggestedRemedy*

Option 1:
Delete NOPWER state from the PD state machine with all the inputs/outputs to it and from it, including the variables associated with it.
Option 2:
1. Delete the exit from POWER_DELAY to NOPOWER. [This will resolve the issue of bypassing the 80msec timer.]
2a. Delete the assignment pse_avail_pwr<==8 from the NOPOWER state OR
2b) add the following text to the variable pse_power_level definition: "When in NOPOWER state, the assignment to the value 8 is optional."
"
Option 3:
1. Make the two inputs to NOPWER optional and pending in implementation specific variable. Change the condition of these two inputs to (VPD<VOff_PD) *option_nopower.
2. Add the variable option_nopower to the variable list.
option_nopower
Implementation specific variable that indicates if PD will go to NOPOWER in case VPD < VOff_PD during POWER_DELAY or POWERED.
Values
FALSE PD will not use NOPOWER in case VPD < VOff_PD during POWER_DELAY or POWERED
TRUE PD will use NOPOWER in case VPD < VOff_PD during POWER_DELAY or POWERED.

After selecting one of the proposed solutions or any other solution, Repeat it for dual-signature PD in page 190 and update variable list accordingly.

*Proposed Response* *Response Status* **O**

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*Cl* **145** *SC* **145.2.5.4** *P* **127** *L* **9** # r01-315

Peker, Arkadiy Microsemi Corporation

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

In the text " temp_var A variable used to store the value of the state variable pd_class_sig." it is not clear that temp_var_pri store the previous result of pd_class_sig. Otherwise there is no meaning to compare between those two in the state machine.

*SuggestedRemedy*

Change from " temp_var A variable used to store the value of the state variable pd_class_sig."
To:
" temp_var A variable used to store the previous value of the state variable pd_class_sig."

*Proposed Response* *Response Status* **O**

---

*Cl* **145** *SC* **145.2.5.4** *P* **127** *L* **11** # r01-316

Peker, Arkadiy Microsemi Corporation

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

In the text "temp_var_pri A variable used to store the value of the state variable pd_class_sig_pri for the Primary Alternative. " it is not clear that temp_var_pri store the previous result of pd_class_sig_pri. Otherwise there is no meaning to compare between those two in the state machine.

*SuggestedRemedy*

1) Change to "temp_var_pri A variable used to store the previous value of the state variable pd_class_sig_pri for the Primary Alternative. "
2) Repeat (2) for the secondary.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **143** *L* **10** # r01-317

Peker, Arkadiy — Microsemi Corporation

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

A problem was identified with the primary (and secondary) state machine that results with issuing 3 class events when the available power is 3 and powering up while the concept is to issue only one class event and powering up. The problem has been created at 4PID3_PRI state which doesn't allow going to CLASS_RESET_PRI in this scenario due to the questions if (temp_var_pri = 4) or not in the conditions at the exits of 4PID3_PRI.
Example: Let's assume the following conditions:
pse_avail_pwr_pri<4
Option_class_probe=FALSE
class_4PID_mult_event_pri=TRUE
pd_req_pwr_pri = class 3 (code 3,3,0).
Now we are in CLASS_EV3_PRI.

Now, the previous temp_var_pri=3, the current pd_class_sig_pri=0, resulting with moving to 4PID3_PRI due to (pd_class_sig_pri not equal temp_var_pri)* (pd_class_sig_pri = 0)=TRUE. As a result, moving to MARK_EV_LAST_PRI, CLASS_EVAL_PRI and then POWER_UP.
The end result is doing 3 class events and power up even if pse_avail_pwr_pri<4
While the concept requires doing 1 class event and power up.
The problem resulted from the 4PID3_PRI exit that doesn't allow to go CLASS_RESET_PRI due to redundant question if (pse_avail_pwr_pri < 4) * (temp_var_pri = 4) while what is important is only if (pse_avail_pwr_pri < 4).
If we remove the part (temp_var_pri = 4) and (temp_var_pri not equal 4) from both exits, this problem will be solved.
This is not the end of this problem. Now After fixing it and doing CLASS_RESET_PRI and going to CLASS_EV1_LCE_4PID_PRI, we will not power because the access to MARK_EV_LAST_PRI is blocked by the condition tlce_timer_pri_done * (pd_class_sig_pri = 4) while pd_class_sig_pri=3. The proposed fix for it is to delete the part (pd_class_sig_pri = 4) and to delete the exit from CLASS_EV1_LCE_4PID_PRI to IDLE_PRI.

*SuggestedRemedy*

1. Change the exit from 4PID3_PRI to CLASS_RESET_PRI from:
   (pse_avail_pwr_pri < 4) * (temp_var_pri = 4)
   To (pse_avail_pwr_pri < 4)
2. Change the exit from 4PID3_PRI to MARK_EV_LAST_PRI from:
   (pse_avail_pwr_pri >= 4) + (temp_var_pri not equal 4)
   To: (pse_avail_pwr_pri >= 4)
3. Change the exit from CLASS_EV1_LCE_4PID_PRI to to MARK_EV_LAST_PRI from:
   tlce_timer_pri_done * (pd_class_sig_pri = 4)
   To: tlce_timer_pri_done
4. Delete the exit from CLASS_EV1_LCE_4PID_PRI to IDLE_PRI

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.7** *P* **250** *L* **1** # r01-318

Jones, Chad — Cisco Systems, Inc.

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

Submitted by the Chair on behalf of Craig Chabot:
PICS need to be updated to reflect changes in the normative text of the Clause 145

*SuggestedRemedy*

Adopt changes in chabot_01_1117.pdf

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.6** *P* **195** *L* **12** # r01-319

Abramson, David — Texas Instruments Inc

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

The group has expressed a desire to deprecate clause 33 in the future. I have found one case in which the clause 145 makes it harder/more expensive to build a compliant PD (without any real benefit) and thus I doubt users would move over the Type 3 and thus clause 33 would never be deprecated.

The case is that of Type 1 PDs. Clause 145 currently requires all Type 3 PDs to include a mark signature, even class 1-3 PDs. This is a burden to the PD and we can elimate it easily.

I suggest that we only lower the minimum Mark Current for Class 1-3 Type 3 PDs which would allow the detect circuit already present in these PDs to be a compliant mark current.

*SuggestedRemedy*

Split item 3 of table 145-25 into two rows. The first row for class 1-3 with a minimum of 180uA. The second row for classes 4-8, with a minimum of 250uA.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.6.1.1** *P* **196** *L* **22** # r01-320

Abramson, David Texas Instruments Inc

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

"When the PD is presenting a mark event signature in a DO_MARK_EVENT state, as shown in the state diagram of Figure 145-26 and Figure 145-28, the PD shall draw IMark as defined in Table 145-25 and present a non-valid detection signature as defined in Table 145-22."

This would prevent class 1-3 PDs from being able to show their detect signature during the MARK state. Since these PDs are not required to count the class events, this requirement should not apply to them (the reason for the requirement is that PDs that count class pulses can count an extra pulse if they have a valid signature during mark and if plugged in during a detect cycle).

NOTE: I haven't considered DS PDs...

*SuggestedRemedy*

Make this requirement only apply to class 4-8 PDs.

"When the PD is presenting a mark event signature in a DO_MARK_EVENT state, as shown in the state diagram of Figure 145-26 and Figure 145-28, the PD shall draw IMark as defined in Table 145-25 and Class 4-8 PDs shall present a non-valid detection signature as defined in Table 145-22."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.7** *P* **183** *L* **22** # r01-321

Abramson, David Texas Instruments Inc

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

In order to allow for the mark change in my other comments, we need to change the SD to allow for possibly valid detect signatures.

*SuggestedRemedy*

in state DO_CLASS_EVENT1:
change "present_det_sig <= invalid"
to:
IF pd_req_class>3
present_det_sig=invalid
ELSE
present_det_sig=either
END

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8.1** *P* **201** *L* **16** # r01-322

Lukacs, Miklos Silicon Laboratories

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

It is confusing that multiple behaviors are listed in the sentence.

*SuggestedRemedy*

Change the text to:
When the PD is in POWER_DELAY or POWERED and Vpd falls below VOff_PD, the PD transitions to
NOPOWER and - depending on the value of Vpd - may show a valid or invalid detection signature, and may or may not draw mark current,
draw any class current, and show MPS.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.1** *P* **103** *L* **15** # r01-323

Bullock, Chris Cisco Systems, Inc.

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

Missing a serial comma. Add a comma after "Powered Device (PD)"

*SuggestedRemedy*

Change:
"They are the power supply, a non-data
entity which is called the Power Sourcing Equipment (PSE), the powered load, another non-data entity
which is called the Powered Device (PD) and the standards based, balanced, twisted-pair cabling connecting
the two."

To:
"They are the power supply, a non-data
entity which is called the Power Sourcing Equipment (PSE), the powered load, another non-data entity
which is called the Powered Device (PD), and the standards based, balanced, twisted-pair cabling connecting
the two."

*Proposed Response* *Response Status* **O**

*Cl* **33** *SC* **33.4.9.3.1** *P* **72** *L* **41** # r01-324

Mcclellan, Brett — Marvell Semiconductor

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

Table 33-20b has a single entry. No table is required. It can be changed to an equation.

*SuggestedRemedy*

Change Table 33-20b into equation 33-19a. change references in the text from Table 33-20b to equation 33-19a
Do the same for Table 33-20c.
Change Table 33-20c into equation 33-19b. change references in the text from Table 33-20c to equation 33-19b

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8.6** *P* **204** *L* **50** # r01-325

Lemahieu, Joris — ON Semiconductor

*Comment Type* **GR** *Comment Status* **X**

"When transient TR1 or TR2 is applied, the PD shall meet the operating power limits after TTransient as
defined in Table 145-30."
It is unclear what exactly is meant by 'the operating power limits'. The limits could be at PSE side as well as PD side. Moreover because the voltage at the PI is no longer static the power limits at PSE and the PD are no longer "in sync". Alsothe 'after TTransient' is not clearly defined.

*SuggestedRemedy*

Referring back to 802.3-2015_SECTION2.pdf (p653) where "PD upperbound template" is used, the term "PSE lowerbound template" (p170-172 in Draft3.1) is related.
Also note 'TTransient' is the same as 'TLIM min'.

Replace "the operating power limits after TTransient as
defined in Table 145-30." by "the PSE lowerbound template (see Figure 145-24 and Figure 145-25)"

*Proposed Response* *Response Status* **O**

*Cl* **1** *SC* **1.4.338** *P* **24** *L* **51** # r01-326

Stewart, Heath — Analog Devices Inc.

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

Second paragraph is redundant with previous descriptions.
Power Sourcing Equipment (PSE): A DTE or midspan device that provides the power to a single link section. DTE powering is intended to provide a single 10BASE-T, 100BASE-TX, or 1000BASE-T device with a unified interface for both the data it requires and the power to process these data. PSEs are defined for use with two different types of balanced twisted-pair PHYs. When used with 2 or 4 pair balanced twisted-pair (BASE-T) PHYs, (see IEEE Std 802.3, Clause 33 or Clause 145), DTE powering is intended to provide a single 10BASE-T, 100BASE-TX, 1000BASE-T, 2.5GBASE-T, 5GBASE-T, or 10GBASE-T device with a unified interface for both the data it requires and the power to process these data. When used with single balanced twisted-pair (BASE-T1) PHYs (see IEEE Std 802.3, Clause 104), DTE powering is intended to provide a single 100BASE-T1 or 1000BASE-T1 device with a unified interface for both the data it requires and the power to process these data. A PSE used with balanced single twisted-pair PHYs is also referred to as a PoDL PSE.

A DTE or midspan Power over Ethernet (Clause 33 and Clause 145) device that provides the power to a single link section. DTE powering Power over Ethernet is intended to provide a single 10BASE-T, 100BASE TX, 1000BASE-T, 2.5GBASE-T, 5GBASE-T, or 10GBASE-T device with a unified interface for both the data it requires and the power to process these data.

*SuggestedRemedy*

Delete:
A DTE or midspan Power over Ethernet (Clause 33 and Clause 145) device that provides the power to a single link section. DTE powering Power over Ethernet is intended to provide a single 10BASE-T, 100BASE TX, 1000BASE-T, 2.5GBASE-T, 5GBASE-T, or 10GBASE-T device with a unified interface for both the data it requires and the power to process these data.

*Proposed Response* *Response Status* **O**

*Cl* **1** *SC* **1.4.417** *P* **25** *L* **6** # r01-327

Stewart, Heath — Analog Devices Inc.

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

The sentence structure does not quite work with the "and". As written each clause requires a verb.
A PD that requests Class 4 during Physical Layer classification, supports Multiple-Event Classification and Data Link Layer classification (see IEEE 802.3, Clause 33).

*SuggestedRemedy*

Add "supports" before "Data Link Layer"

*Proposed Response* *Response Status* **O**

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*Cl* **30** *SC* **30.9.1.1.5b** *P* **37** *L* **27** # r01-329

Stewart, Heath — Analog Devices Inc.

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

aPSEPowerDetectionStatusA and B both have similar NOTE text. However, in the B version the NOTE- is missing.

*SuggestedRemedy*

Add "NOTE-" prior to "A derivative attribute may width to apply a delay"

*Proposed Response* *Response Status* **O**

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*Cl* **30** *SC* **30.9.1.1.9** *P* **39** *L* **29** # r01-331

Stewart, Heath — Analog Devices Inc.

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

Since aPSEOverLoadCounter was split into 3 versions the original aPSEOverLoadCounter no longer needs to handle the primary and secondary counts.

*SuggestedRemedy*

Change
This counter is incremented when the PSE state diagram (Figure 33-9, Figure 145-13, Figure 145-15, and Figure 145-16) enters the state ERROR_DELAY, ERROR_DELAY_PRI, or ERROR_DELAY_SEC.
to
This counter is incremented when the PSE state diagram (Figure 33-9 and Figure 145-13) enters the state ERROR_DELAY.

*Proposed Response* *Response Status* **O**

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*Cl* **145** *SC* **145.1.3** *P* **106** *L* **18** # r01-334

Stewart, Heath — Analog Devices Inc.

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

Various phrases relating to pairset DC (loop) resistance have been adjusted. Now one phrase contains word ordering which is inconsistent with the others.
Pairset DC loop resistance
maximum pairset DC loop resistance
actual DC pairset resistance

*SuggestedRemedy*

Change
actual DC pairset resistance
to
actual pairset DC resistance

*Proposed Response* *Response Status* **O**

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*Cl* **145** *SC* **145.2.5.4** *P* **120** *L* **6** # r01-335

Stewart, Heath — Analog Devices Inc.

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

Typo during comment execution. Error_condition_pri appears twice. Second occurrence should be error_condition_sec.

*SuggestedRemedy*

Change error_condition_pri to error_condition_sec.

*Proposed Response* *Response Status* **O**

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*Cl* **145** *SC* **145.2.5.4** *P* **121** *L* **42** # r01-336

Stewart, Heath — Analog Devices Inc.

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

option_detect_ted_timer_pri/sec both refer to ted_timer when they should be referring to their respective timers ted_timer_pri/sec.

*SuggestedRemedy*

In description of option_ted_timer_pri change "ted_timer' to "ted_timer_pri" 3 times.
In description of option_ted_timer_sec change "ted_timer' to "ted_timer_sec" 3 times.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.5** *P* **127** *L* **48** # r01-337

Stewart, Heath — Analog Devices Inc.

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

and should be through
tcev_timer_pri
A timer used to limit the second and fourth class events...

*SuggestedRemedy*

Change line 47 and line 51
second and fourth
to
second through fourth

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.6** *P* **130** *L* **1** # r01-338

Stewart, Heath — Analog Devices Inc.

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

This functions discovers. Should be function in the singular.

*SuggestedRemedy*

Change
This functions discovers
to
This function discovers

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.5.1** *P* **166** *L* **18** # r01-341

Stewart, Heath — Analog Devices Inc.

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

Extraneous the.
The degree to which the current is unbalanced depends on the specific combination of PSE, cabling, and the PD.

*SuggestedRemedy*

Change "and the PD" to "and PD"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.5.1** *P* **166** *L* **44** # r01-342

Stewart, Heath — Analog Devices Inc.

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

It is extremely unclear how to interpret the shall which shalls the entire sections requirements. Are the requirements limited to the sections shalls? Thus did we shall the shall?

*SuggestedRemedy*

Delete
The PSE PI connector (jack) when mated with a specified balanced cabling connector (plug) shall meet the requirements of 145.2.8.5.1.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.10** *P* **172** *L* **41** # r01-343

Stewart, Heath — Analog Devices Inc.

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

Extraneous the.
The specification for VOff in Table 145-16 shall apply to the PI voltage in the IDLE.

*SuggestedRemedy*

Change
The specification for VOff in Table 145-16 shall apply to the PI voltage in the IDLE.
To
The specification for VOff in Table 145-16 shall apply to the PI voltage in IDLE.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.2** *P* **176** *L* **35** # r01-344

Stewart, Heath — Analog Devices Inc.

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

Link to Table 145-19 is broken

*SuggestedRemedy*

Fix link

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.2** *P* **177** *L* **36** # r01-345

Stewart, Heath Analog Devices Inc.

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

Text block is not aligned

*SuggestedRemedy*

Fix alignment at "denotes"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.2** *P* **177** *L* **40** # r01-346

Stewart, Heath Analog Devices Inc.

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

Missing "in"
PSE are required to switch the negative pairs, but not required to switch the positive pairs as defined 145.4.1.1.1

*SuggestedRemedy*

Change "defined 145.4.1.1.1" to "defined in 145.4.1.1.1"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.3** *P* **178** *L* **41** # r01-347

Stewart, Heath Analog Devices Inc.

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

The use of the NOPOWER state is not clearly communicated.

*SuggestedRemedy*

Add to end of description:
When nopower is TRUE interoperability between PSE and PD is no longer guaranteed.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.3** *P* **178** *L* **45** # r01-348

Stewart, Heath Analog Devices Inc.

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

There are two false entries for nopower. This is certainly a typo.

*SuggestedRemedy*

Change
FALSE: The PD has been in NOPOWER.
To
TRUE: The PD has been in NOPOWER.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.5** *P* **181** *L* **25** # r01-349

Stewart, Heath Analog Devices Inc.

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

A PD is allowed to rely on the PSE inrush limiting for the entire tinrush_PD time (50ms). All text subclauses refer correctly to tInrush_PD max.

*SuggestedRemedy*

Change "tInrush_PD" to "tInrush_PD max"
Also change on page 188, lines 3 and 6.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.5** *P* **181** *L* **27** # r01-350

Stewart, Heath Analog Devices Inc.

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

The single-signature tpowerdly_timer description has become out of sync with the dual signature description.

A PD is allowed to rely on the PSE inrush limiting for the entire tinrush_PD time (50ms).

*SuggestedRemedy*

Change
A timer used to prevent the PD from drawing more than IInrush_PD and IInrush_PD-2P during thePSE's inrush period; See Tdelay in Table 145-29.
to
A timer used to prevent the PD from drawing more than IInrush_PD and IInrush_PD-2P from TInrush_PD to Tdelay. See Table 145-29.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.8** *P* **185** *L* **40** # r01-351

Stewart, Heath Analog Devices Inc.

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

A bunch of constants were moved from the PD single-signature constants section to the variables section. Do the same for dual-signatures.

*SuggestedRemedy*

Move Vmark_th, Voff_PD, Von_PD and Vreset_tb to variables subclause.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.8** *P* **185** *L* **47** # r01-352

Stewart, Heath Analog Devices Inc.

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

Changes were made to Vreset_PD in the single-signature PD constant description and should be mirrored in the dual-signature PD constants section.

*SuggestedRemedy*

Change
VReset_PD Reset voltage per pairset
to
VReset_PD maximum The maximum PD reset voltage

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.9** *P* **186** *L* **11** # r01-353

Stewart, Heath Analog Devices Inc.

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

The nopower_mode(X) variable is not defined. Copy the nopower variable description and implement.

*SuggestedRemedy*

Insert variable definition:
nopower_mode(X)
A variable that indicates the PD has been in NOPOWER, which indicates VPD_mode(X) was below VOff_PD while being powered, since the last time VPD_mode(X) was below VReset for at least TReset. When nopower is TRUE interoperability between PSE and PD is no longer guaranteed.
Values:
FALSE: The PD mode has not been in NOPOWER.
TRUE: The PD mode has been in NOPOWER.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.9** *P* **186** *L* **11** # r01-354

Stewart, Heath Analog Devices Inc.

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

The pd_current_limit variable was removed from the single-signature state machine but was not removed from the dual-signature state machine.

*SuggestedRemedy*

Remove variable definition pd_current_limit_mode(X) definition
and from Figure 145-28 OFFLINE, IDLE, INRUSH, NOPOWER, POWER_DELAY and POWERED states.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.11** *P* **190** *L* **29** # r01-355

Stewart, Heath Analog Devices Inc.

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

In the single-signature state machine the pd_power_update is cleared in the POWERED state. In the dual-signature state machine the pd_power_update_mode(X) is cleared in the POWER_UPDATE state. This may cause a race condition.

*SuggestedRemedy*

Move pd_power_update_mode(X) <= FALSE from POWER_UPDATE to POWERED

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8.9** *P* **205** *L* **50** # r01-356

Stewart, Heath Analog Devices Inc.

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

It is extremely unclear how to interpret the shall which shalls the entire sections requirements. Are the requirements limited to the sections shalls? Thus did we shall the shall?

*SuggestedRemedy*

Delete
The PD PI connector (jack) when mated with a specified balanced cabling connector (plug) shall meet the requirements of 145.3.8.9.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.3.1** *P* **225** *L* **25** # r01-357

Stewart, Heath Analog Devices Inc.

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

Some of the pse_initial_value settings (class 6 and 8) were set based on assumptions about zero cable length. Perhaps this was in anticipation of a extended power usage model which has been lost.

*SuggestedRemedy*

Change
6 600
8 900
to
6 510
8 713

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.4.2** *P* **230** *L* **2** # r01-358

Stewart, Heath Analog Devices Inc.

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

Some of the pd_initial_value settings (class 6 and 8) were set based on assumptions about zero cable length. Perhaps this was in anticipation of a extended power usage model which has been lost.

*SuggestedRemedy*

Change
6 600
8 900
to
6 510
8 713

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.6.2** *P* **235** *L* **45** # r01-359

Stewart, Heath Analog Devices Inc.

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

An old 35.5W number needs to be updated to 35.6W to track the rest of the clause.

*SuggestedRemedy*

Change 355 to 356

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.7.2** *P* **239** *L* **32** # r01-360

Stewart, Heath Analog Devices Inc.

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

An old 35.5W number needs to be updated to 35.6W to track the rest of the clause.

*SuggestedRemedy*

Change 355 to 356

*Proposed Response* *Response Status* **O**

*Cl* **145C** *SC* **145C.1** *P* **287** *L* **29** # r01-361

Stewart, Heath Analog Devices Inc.

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

A Class 4 PD is correct described in the adjancent text as drawing 25.5W but Figure 145C-1 and 145C-2 show 25 W.

*SuggestedRemedy*

Change 25W to 25.5W

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1.6** *P* **37** *L* **32** # r01-363

Stewart, Heath Analog Devices Inc.

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

*** Comment submitted with the file 94875700003-stewart_02_1117.pdf attached ***

The aPSEPowerDetectionStatus was split into 3 versions. One for Cl 33, One for cl 145 single-signature and two for Cl 145 dual-signature A/B. The aPSE PowerClassification should get the same treatment.

*SuggestedRemedy*

See stewart_02_1117.pdf for remedy.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.2.1.18h** *P* **45** *L* **2** # r01-364

Stewart, Heath Analog Devices Inc.

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

*** Comment submitted with the file 94875800003-stewart_03_1117.pdf attached ***

aLldpXdot3Loc/RemDualSigPowerClassExtModeA/B are all seemingly redundant with the ill-formed aLldpXdot3Loc/RemPowerClassExtA/B versions. By collapsing and combining these definitions it will make more sense.

*SuggestedRemedy*

See stewart_03_1117.pdf for remedy.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **145** *L* **10** # r01-365

Stewart, Heath Analog Devices Inc.

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

*** Comment submitted with the file 94875900003-stewart_04_1117.pdf attached ***

A few issues exist. The usage of pd_req_pwr_pri in CLASS_EVAL_PRI is dated and does not account for the updated usage of pse_allocated_pwr_xxx. The main PSE state diagram correctly references pse_allocated_pwr to decide if enough power exists to turn on PD. The pd_req_pwr_xxx variable is intended to communicate how much the PD requested, to the limit of the PSEs ability to know that information.
The state machine CLASS_EVAL_PRI/SEC exit arcs need to reference the correct variable.
The description of pd_req_pwr_pri/sec need to be updated to correctly describe the usage.
The Class 0 encoding needs to be removed from the do_class_probe_pri/sec return variable enumeration since it is not a legal return value (see do_classification_pri/sec.)

*SuggestedRemedy*

See stewart_04_1117.pdf

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8** *P* **161** *L* **25** # r01-366

Stewart, Heath Analog Devices Inc.

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

*** Comment submitted with the file 94876000003-paul_1117_01.pdf attached ***

Changes made to unbalance in Draft 3.1 have created interoperability issues. The Iunbalance-2P values should be reverted to the Draft 3.0 values.

*SuggestedRemedy*

See paul_01_1117.pdf

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.4.9.4.1** *P* **222** *L* **1** # r01-367

Mcclellan, Brett Marvell Semiconductor

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

Table 145-38 has a single entry. No table is required. It can be changed to an equation.

*SuggestedRemedy*

Change Table 145-38 into equation 145-34a. change references in the text from Table 145-38 to equation 145-34a
Do the same for Table 145-39.
Change Table 145-39 into equation 145-34b. change references in the text from Table 145-39 to equation 145-34b

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1.5** *P* **36** *L* **11** # r01-368

Stewart, Heath Analog Devices Inc.

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

*** Comment submitted with the file 94876100003-stewart_01_1117.pdf attached ***

Changes incorrectly pushed out to aPSEPowerDetectionStatus instead of aPSEPowerDetectionStatusS. This brings the removal of test mode into conflict with Clause 33.

*SuggestedRemedy*

See stewart_01_1117.pdf for remedy.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.7.3.3** *P* **265** *L* **12** # r01-369

Lemahieu, Joris — ON Semiconductor

*Comment Type* **G** *Comment Status* **X**

"Meet the operating power limits after TLIM min"
It is unclear what exactly is meant by 'the operating power limits'.

*SuggestedRemedy*

Re-use "In accordance with ILIM-2P and TLIM in Table 145-16" as in PSE76

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.3.1.18k** *P* **56** *L* **17** # r01-370

Stewart, Heath — Analog Devices Inc.

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

*** Comment submitted with the file 94876200003-stewart_03_1117.pdf attached ***

The aLldpXdot3Loc/RemPowerClassExt variable should contain Class enumerations but instead has a cut/paste error containing PSE/PD enumerations. Similar error to aLldpXdot3Loc/RemPowerClassExtA/B.

*SuggestedRemedy*

See stewart_03_1117.pdf for remedy.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8.6** *P* **204** *L* **40** # r01-371

Lemahieu, Joris — ON Semiconductor

*Comment Type* **GR** *Comment Status* **X**

It is confusing what is actually meant by The Source current specified in Table 145-30.

*SuggestedRemedy*

The Source current specified in Table 145-30 is actually the per pairset current limit. For single-signature PDs, a voltage source with a current limit of twice this value may be used.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8.6** *P* **204** *L* **40** # r01-372

Lemahieu, Joris — ON Semiconductor

*Comment Type* **GR** *Comment Status* **X**

It is confusing what is actually meant by The Source resistance specified in Table 145-30.

*SuggestedRemedy*

The Source resistance specified in Table 145-30 is actually the per pairset resistance. For single-signature PDs, the equivalent resistance between source and load is actually half this value.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8.6** *P* **204** *L* **47** # r01-373

Lemahieu, Joris — ON Semiconductor

*Comment Type* **G** *Comment Status* **X**

"aThe source resistance is the effective 4-pair resistance."
This seems to contradict with 'Rch' in the table that is defined as "RCh is the maximum pairset DC loop resistance, as defined in Table 145-1." on page 106 in 145.1.3.

*SuggestedRemedy*

Replace Rch by Rchan or replace 4-pair by pairset.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.5.1** *P* **168** *L* **51** # r01-374

Stover, David — Analog Devices Inc.

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

Iunbalance-2P references Table 145-16; is defined in Table 145-17.

*SuggestedRemedy*

Change "as defined in Table 145-16" to "as defined in Table 145-17".

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.1** *P* **103** *L* **40** # r01-375

Stover, David Analog Devices Inc.

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

"A method for a PSE and the PD to which it is connected to dynamically negotiate and allocate power."
1) Are we worried about the reader interpreting this as "the PD to which it is not connected"?
2) "allocate" is redundant to "negotiate" (and incorrect--the PSE allocates power and/or the PSE requests power).

*SuggestedRemedy*

Change: "A method for a PSE and the PD to which it is connected to dynamically negotiate and allocate power" to "A method for a PSE and a PD to dynamically negotiate power"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.1.3** *P* **105** *L* **45** # r01-376

Stover, David Analog Devices Inc.

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

"For 2-pair systems that provide Class 4 power or less, two twisted pairs are required to source Icable" easily misinterpreted as though there is a minimum current requirement. Add "in order for", which matches related Icable statements elsewhere in this paragraph.

*SuggestedRemedy*

Change "For 2-pair systems that provide Class 4 power or less, two twisted pairs are required to source Icable" to "For 2-pair systems that provide Class 4 power or less, two twisted pairs are required in order for the PSE to source Icable"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.4** *P* **115** *L* **6** # r01-377

Stover, David Analog Devices Inc.

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

"are called Alternatives A and Alternative B" mixed form

*SuggestedRemedy*

Change "Alternatives A" to "Alternative A"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8.9** *P* **207** *L* **17** # r01-378

Stover, David Analog Devices Inc.

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

Vsource appears to be "any voltage in the range of Vport_PSE-2P" per the shall statements on page 206. Vsource is specified behind Rsource, while Rsource lumped resistance model includes PSE resistance contributions. Actually, Vsource should be tuned to achieve VPort_PSE-2P at the virtual PSE output.

*SuggestedRemedy*

Split Rsource into Rsource1, Rsource2. Specify Vsource as Vport_PSE-2P, measured between Rsource1 and Rsource2. TFTD values of Rsource1, Rsource2.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.3** *P* **118** *L* **1** # r01-379

Stover, David Analog Devices Inc.

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

"For a dual-signature PD, parallel detection means that detection both pairsets is done..." Missing "on".

*SuggestedRemedy*

Change "that detection both pairsets" to "that detection on both pairsets"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **123** *L* **8** # r01-380

Stover, David Analog Devices Inc.

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

"to determine the PD's Type" posessive.

*SuggestedRemedy*

Change to "to determine PD Type" (four places; pd_cls_4PID_pri and pd_cls_4PID_sec, do_class_probe_pri, do_class_probe_sec).

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **128** *L* **43** # r01-381

Stover, David Analog Devices Inc.

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

tinrush_timer_sec references "Tinrush-2P", which no longer exists.

*SuggestedRemedy*

Change "Tinrush-2P" to "Tinrush".

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **131** *L* **35** # r01-382

Stover, David Analog Devices Inc.

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

There is a statement "(pd_class_sig_pri will have a value of 4 for the first two class events and a value of 3 for any subsequent class events.)" floating next to pd_req_pwr_pri = 5. We call out Table 145-27, which indicates class_sig_a and class_sig_b for all values.

*SuggestedRemedy*

Delete floating comment (2 locations: do_classification_pri and do_classification_sec).

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **132** *L* **51** # r01-383

Stover, David Analog Devices Inc.

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

Bad alignment of "the PI." in definition of sig_type = dual.

*SuggestedRemedy*

Fix alignment

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **140** *L* **5** # r01-386

Stover, David Analog Devices Inc.

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

SEMI_PWRON_X states have an unusual format.

*SuggestedRemedy*

Adjust state title width to match state contents for SEMI_PWRON_PRI, _SEC states.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **140** *L* **5** # r01-387

Stover, David Analog Devices Inc.

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

Transition logic is cut off between SEMI_PWRON_PRI and POWER_DENIED

*SuggestedRemedy*

Change "!power_avail-" to "!power_available"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8** *P* **162** *L* **32** # r01-388

Stover, David Analog Devices Inc.

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

Ptype for Type 3 PSEs is never referenced anywhere in the draft.

*SuggestedRemedy*

Delete Ptype for Type 3 PSEs

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8** *P* **162** *L* **34** # r01-389

Stover, David — Analog Devices Inc.

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

Ptype,min for Type 4 PSEs is never referenced anywhere in the draft. Furthermore, the listed value (75W) is wrong.

*SuggestedRemedy*

Delete Ptype,min for Type 4 PSEs. Replace with an endash, or similar, to indicate Ptype is a single value: 99.9W.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.2** *P* **176** *L* **48** # r01-390

Stover, David — Analog Devices Inc.

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

"The PD shall withstand any voltage from 0V to 57V applied any of the valid configurations..." missing a preposition

*SuggestedRemedy*

Change "applied any of the valid" to "applied to any of the valid"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **143** *L* **22** # r01-391

Stover, David — Analog Devices Inc.

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

*** Comment submitted with the file 94876300003-stover_02_1117.pdf attached ***

"In PSE dual-sig class diagrams, CLASS_EV1_LCE_4PID_X states check for ""pd_class_sig_x = 4"" as a double-check that PD class_ev1 response has not changed between class reset events. Now that class_probe dumps into this state, pd_class_sig_x could have been any valid class_sig (not just 4).
To fix:
1) ensure that pd_class_sig_x from class_ev1 is recorded to temp_var_x in all cases, and,
2) compare temp_var_x to pd_class_sig_x when exiting state CLASS_EV1_LCE_4PID_X."

*SuggestedRemedy*

Adopt stover_02_1117.pdf

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.5** *P* **192** *L* **22** # r01-392

Stover, David — Analog Devices Inc.

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

*** Comment submitted with the file 94876400003-stover_01_1117.pdf attached ***

Missing description of single-signature PD behavior for VPD < 10.1V

*SuggestedRemedy*

Adopt stover_01_1117.pdf

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8.6** *P* **204** *L* **52** # r01-393

Lemahieu, Joris — ON Semiconductor

*Comment Type* **GR** *Comment Status* **X**

What is the benefit of defining TR3?
TR1 and TR2 cover long ("lasting more than 250 is") transients related to the switchover of backup power supplies.
TR3 is a very fast (0.71us is way below 250us and even 30us). For relatively fast transients related to load changes one would expect the initial and final voltage to be the same and having a lower intermediate voltage. If the fall and rise times are small, one would not expect the Cport to discharge and recharge much.
Peak currents way below Ilim are listed and expected to happen.
For the rest the definition seems completely arbitrary: where do the 5A 1.5ohm and 4ms come from. Also how should the 1.5ohm and 5A be interpreted for single signature and dual signature?
The definition of TR3 needs to be reworked completely anyhow.

*SuggestedRemedy*

I think it is better to just delete the TR3 requirement.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8** *P* **198** *L* **39** # r01-394

Johnson, Peter

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

Draft 3.1 still has the issue where parameters entered as Maximums with no Minimums in Table 145-29 are sometimes treated as ranges and sometimes treated as constants. Example: Pport_PD (Items 8 and 9) are CLEARLY ranges, effectively from 0W to Pclass_PD. However Pclass_PD, Ppeak_PD, and their 2P equivalents are CLEARLY constants and are used as such in the text (e.g. 145.3.8.2, 145.3.8.3) and similarly in the PSE section (e.g. EQ 145-2). The PSE section does not have this problem as Pclass (and Pclass_2P) are defined in equations with maximum possible values in Table 145-11.

*SuggestedRemedy*

Expand Table 145-11 to include Pclass_PD, Pclass_PD-2P, Ppeak_PD, and Ppeak_PD-2P (adding 2 columns). It is not inappropriate to place these in the PSE section because there are equations in the PSE section that use all four parameters. Table 145-11 includes the column "Assigned Class" - so it has the correct index for these values. THEN... remove them from Table 145-29.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.7** *P* **156** *L* **32** # r01-395

Johnson, Peter

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

Table 145-11 footnotes NOTE 1 and NOTE 2 should clarify that Pclass and Pclass-2P refer only to Table 145-11 and not more generally.

*SuggestedRemedy*

Change to: NOTE 1: Pclass in Table 145-11 is the minimum E. NOTE 2: Pclass-2P in Table 145-11 is the minimumE

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.7** *P* **156** *L* **32** # r01-396

Johnson, Peter

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

Table 145-11 footnotes NOTE 1 and NOTE 2 point to Tables 145-26 and 145-27 to get the "maximum power available ot PDs". Tables 145-26 and 145-27 provide "Requested Power" values but have no concept of assigned PD class that defines maximum power available.

*SuggestedRemedy*

These notes should point to whatever table relates PD assigned class to Pclass_PD and Pclass_PD-2P. (I have another comment that suggests that table should not be 145-29 but be 145-11 instead.)

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.6c** *P* **86** *L* **10** # r01-397

Skinner, John

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

Function name for bits 13:12 in Table 79-6c-Power status field is "PD powering status". This does not agree with the field name in 79.3.2.6c.2 "PD powered status".

*SuggestedRemedy*

Correct text for bits 13:12 in in Table 79-6c-Power status to read "PD powered status", which is the accurate name for what this field indicates.

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.6d.2** *P* **87** *L* **50** # r01-398

Skinner, John

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

Clause heading text for 79.3.2.6d.2 is "PD 4PID". This does not agree with the field name in Table 79-6d-System setup field, "PD Load". This appears to be an editorial issue where the clause was actually intended to add a description of the new use for bit 2 in Table 79-4-Power type/source/priority field.

*SuggestedRemedy*

The clause should be renumbered 79.3.2.4.2 "PD 4PID", and should be located after line 44 on page 83.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.4** *P* **244** *L* **7** # r01-399

Skinner, John

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

In the sentence "PSEs shall use values in the range defined in Table 145-41...", the table reference is incorrect. Same problem exists for the reference on line 8 for PDs "...Table 145-42...".

*SuggestedRemedy*

Change the table referenced on line 7 from Table 145-41 to Table 145-42. Change the table referenced on line 8 from Table 145-42 to Table 145-43.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.5.1** *P* **245** *L* **20** # r01-400

Skinner, John

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

The statement "When the PSE is not in sync with the PD, the PSE is allowed to change its power allocation." is too broad, based on the conditions shown in Figure 145-39. The transition from PSE_POWER_REVIEW to MIRROR_UPDATE is governed by the conditions: Either (pse_new_value < PSEAllocatedPowerValue) OR (PSEAllocatedPowerValue=MirroredPSEAllocatedPowerValueEcho). Therefore, the transition can only occur when the PSE is reducing the allocation OR when the PSE and PD are in sync.

*SuggestedRemedy*

Change the statement in line 20 to "When the PSE is not in sync with the PD, the PSE is allowed to reduce its power allocation.". Alternatively, remove the statement, as the conditions are correctly discussed in the paragraph starting on line 23.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.6.2** *P* **247** *L* **4** # r01-401

Skinner, John

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

The statement "When the PSE is not in sync with the PD, the PSE is allowed to change its power allocation." is too broad, based on the conditions shown in Figures 145-43 and 145-44. The transition from PSE_POWER_REVIEW to MIRROR_UPDATE in Figure 145-43 is governed by the conditions: Either (pse_new_value_alt(X) < PSEAllocatedPowerValue_alt(X)) OR (PSEAllocatedPowerValue_alt(X)=MirroredPSEAllocatedPowerValueEcho_alt(X)). The transition from PSE_POWER_REVIEW to MIRROR_UPDATE in Figure 145-44 is governed by the conditions: Either (pse_new_value_alt(P) < PSEAllocatedPowerValue) OR (PSEAllocatedPowerValue=MirroredPSEAllocatedPowerValueEcho). Therefore, in both cases, the transition can only occur when the PSE is reducing the allocation OR when the PSE and PD are in sync.

*SuggestedRemedy*

Change the statement in line 4 to "When the PSE is not in sync with the PD, the PSE is allowed to reduce its power allocation.". Alternatively, remove the statement, as the conditions are correctly discussed in the paragraph starting on line 7.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.7** *P* **248** *L* **3** # r01-402

Skinner, John

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

The statement "...the PSE may update the PSEAllocatedPowerValue and follow the procedure in 145.5.5.1." only defines how to update Single Signature devices. There are no apparent limitations discussed in 145.2.7.2 or 145.3.6.2 (or the state diagram Figure 145-13) regarding Autoclass being solely used with single Signature Devices.

*SuggestedRemedy*

Modify the statement to add a reference to the PSE state change procedure across a link (dual signature) "...the PSE may update the PSEAllocatedPowerValue and follow the procedure in 145.5.5.1 (single signature) or 145.5.6.2 (dual signature)."

*Proposed Response* *Response Status* **O**

*Cl* **33** *SC* **33.4.6** *P* **68** *L* **31** # r01-403

Darshan, Yair

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

The coupled noise of 1mV for 2.5GHz to 10GHz is too small.

*SuggestedRemedy*

Change to 2mV

*Proposed Response* *Response Status* **O**

*Cl* **79** *SC* **79.3.2.6d.3** *P* **88** *L* **32** # r01-404

Darshan, Yair

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

This comment is marked PDISO-1.
In the text for 79.3.2.6d.3 PD Load: "This field shall be set according to Table 79-6d when the power type is PD. Electrically isolated for this bit
field shall mean greater than or equal to 50 k ohm resistance between any one connection of Mode A and any one connection on Mode B, when measured using at least VPort_PSE-2P minimum for Type 4 PSEs. This field shall be set to 0 when the power type is PSE." we have few issues:
1) The part ".....between any one connection of Mode A and any one connection on Mode B..." is not clear and may lead to overdesign. The current isolation requirement of 50 Kohm is for the load during power up and power on states and not during detection and classification states.
2) The isolation during detection of dual-signature PD need to be higher than 50K (at least 500K) and is required between the negative connections of Mode A and Mode B. Regarding the positive pairs, this requirement is optional.
3) These requirements are for Type 3 and 4 PSEs and not just for Type 4 PSE.

*SuggestedRemedy*

Change from "This field shall be set according to Table 79-6d when the power type is PD. Electrically isolated for this bit field shall mean greater than or equal to 50 k ohm resistance between any one connection of Mode A and any one connection on Mode B, when measured using at least VPort_PSE-2P minimum for Type 4 PSEs. This field shall be set to 0 when the power type is PSE."
To:
"This field shall be set according to Table 79-6d when the power type is PD. Electrically isolated for this bit field shall mean greater than or equal to 50 k ohm resistance between any one connection of Mode A and any one connection on Mode B in the powerup and power on states and 500K between the negative pairs of Mode B during connection check, detection and classification states, when measured using at least VPort_PSE-2P minimum for Type 3 and Type 4 PSEs. This field shall be set to 0 when the power type is PSE."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.1** *P* **116** *L* **49** # r01-405

Darshan, Yair

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

It will help the reader if we add text in the intro to the state machine that the PSE state machine is based on the following concept:
The primary alternative is the OmasterO and powering secondary is pending if primary is valid, so if primary fails detection, we donOt power the secondary regardless if its signature is valid or not.
(As a result, if we want to power secondary if primary fails detection, we can flip by going to IDLE and set the other alternative as primary. )

*SuggestedRemedy*

Add the following text after line 49:
"When PSE supports dual-signature PD, powering secondary is enabled if primary is valid regardless if secondary is valid. If powering secondary is needed when primary is not valid during 4-pair operation, it may be necessary to swap the roles pf Alternative A and Alternative B in IDLE in order to power the secondary."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.3** *P* **117** *L* **49** # r01-406

Darshan, Yair

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

The definition of parallel detection for single-signature and for dual-signature looks practically the same. As a result, the following text can be simplified: "For a single-signature PD, parallel detection means that detection on both pairsets is done within the Tdet time period. For a dual-signature PD, parallel detection means that detection on both pairsets is done within the same Tdet time period."

*SuggestedRemedy*

Change from:
"For a single-signature PD, parallel detection means that detection on both pairsets is done within the Tdet time period. For a dual-signature PD, parallel detection means that detection on both pairsets is done within the same Tdet time period."
To:
"Parallel detection means that detection on each pairset is done within the Tdet time period. See Annex 145B.1 for details."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.3** *P* **117** *L* **50** # r01-407

Darshan, Yair

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

In the text "For a dual-signature PD, parallel detection means that detection both pairsets is done within the same Tdet time period.": Missing "of".

*SuggestedRemedy*

Change from " "For a dual-signature PD, parallel detection means that detection both pairsets
is done within the same Tdet time period."
To: "For a dual-signature PD, parallel detection means that detection of both pairsets is done within the same Tdet time period."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.3** *P* **117** *L* **52** # r01-408

Darshan, Yair

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

1) The definition of staggered detection for single-signature and for dual-signature are the same. As a result text can be simplified.
2) In addition, typo in page 118 line 1, the "parallel" need to be staggered".

*SuggestedRemedy*

Change from: "For a single-signature PD, staggered detection means that detection on both pairsets is done in different Tdet cycles. For a dual-signature PD, parallel detection means that detection both pairsets is done in different Tdet cycles."
To: "Staggered detection means that detection on both pairsets is done in different Tdet cycles. See Annex 145B.1 for details. "

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.3** *P* **118** *L* **1** # r01-409

Darshan, Yair

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

Typo in the text "For a dual-signature PD, parallel detection means that detection both pairsets is
done in different Tdet cycles.". The "parallel" need to be staggered". In addition, the word "of" is missing.

*SuggestedRemedy*

Change from: "For a dual-signature PD, parallel detection means that detection both pairsets is
done in different Tdet cycles."
To: "For a dual-signature PD, staggered detection means that detection of both pairsets is done in different Tdet cycles."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.3** *P* **118** *L* **36** # r01-410

Darshan, Yair

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

The text of alt_pwrd_pri variable "TRUE: The PSE has detected, classified, and will power a PD on the Primary Alternative,
is powering the Primary Alternative.", looks it has a copy past error. The part "is powering the Primary Alternative" need to be deleted. It should be similar to what we have in alt_pwrd_sec variable.

*SuggestedRemedy*

Change from: "TRUE: The PSE has detected, classified, and will power a PD on the Primary Alternative, is powering the Primary Alternative."
To: "TRUE: The PSE has detected, classified, and will power a PD on the Primary Alternative."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **119** *L* **41** # r01-411

Darshan, Yair

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

Link to table 79-4 doesnOt work.

*SuggestedRemedy*

Fix the link to Table 79-4.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **120** *L* **7** # r01-412

Darshan, Yair

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

Variable name has typo. It is error_condition_sec.

*SuggestedRemedy*

Change to "error_condition_sec"

*Proposed Response* *Response Status* **O**

*Cl* **0** *SC* **0** *P* **123** *L* **53** # r01-413

Darshan, Yair

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

The variable pse_allocated_power for value 3 need to be Class 0 or class 3.

*SuggestedRemedy*

Change from "3: Class 3" To: "3: Class 0, 3"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **125** *L* **43** # r01-414

Darshan, Yair

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

1. In the text "Controls the resetting of the PSE state diagram on Alternative A." it is Primary Alternative and not Alternative A.
2. The same in line 46.

*SuggestedRemedy*

Change from "Alternative A" to "Primary Alternative" in both locations.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **125** *L* **43** # r01-415

Darshan, Yair

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

pse_reset_pri: change alternative A to primary alternative. Same in line 46.

*SuggestedRemedy*

change alternative A to primary alternative.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **125** *L* **51** # r01-416

Darshan, Yair

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

1. In the text "Controls the resetting of the PSE state diagram on Alternative B." it is Secondary Alternative and not Alternative B
2. The same in page 126 line 2.

*SuggestedRemedy*

Change from "Alternative B" to "Secondary Alternative" in both locations.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.4** *P* **125** *L* **51** # r01-417

Darshan, Yair

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

pse_reset_sec: change alternative B to secondary alternative. Same in page 126 line 2.

*SuggestedRemedy*

change alternative B to secondary alternative.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.5** *P* **127** *L* **48** # r01-418

Darshan, Yair

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

Error in the tcev_timer_pri definition - the timer is relevant also to 3rd class event.

*SuggestedRemedy*

Change from " A timer used to limit the second and fourthE"
to " A timer used to limit the second through fourthE".

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.5** *P* **127** *L* **51** # r01-419

Darshan, Yair

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

Error in the tcev_timer_sec definition - the timer is relevant also to 3rd class event.

*SuggestedRemedy*

Change from " A timer used to limit the second and fourthE"
to " A timer used to limit the second through fourthE".

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.6** *P* **129** *L* **18** # r01-420

Darshan, Yair

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

The function do_class_probe doesnOt return a value for error code (we have it only if we go through the states in the procedure when available power >=4). We can fix it in two ways:
Option A: To add output for the function do_class_probe such as class_error OR
Option B (Preferred) : To add new variable class_error to the variable list and add it to the input to the IDLE state in page 135.

*SuggestedRemedy*

1. Add the variable class_error to the variable list:
class_error
A variable indicating if during do_class_probe function, invalid class result was detected.
Values:
FALSE: No invalid class result was detected.
TRUE: Invalid class result was detected.
2. Change the input condition to IDLE in page 130 from:
(pse_enable = enable) * (pse_reset + iclass_lim_det + error_condition)
To:
(pse_enable = enable) * (pse_reset + iclass_lim_det + error_condition+class_error)

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.6** *P* **129** *L* **18** # r01-421

Darshan, Yair

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

The function do_class_probe_pri doesnOt return a value for error code (we have it only if we go through the states). We can fix it in two ways:
Option A: To add output for the function do_class_probe_pri such as class_error_pri OR
Option B (preferred) : To add new variable class_error_pri to the variable list and add it to the input to the IDLE_PRI state in page 141.
Repeat this solution for the secondary as well.

*SuggestedRemedy*

1. Add the variable class_error_pri to the variable list:
class_error_pri
A variable indicating if during do_class_probe_pri function, invalid class result was detected.
Values:
FALSE: No invalid class result was detected.
TRUE: Invalid class result was detected.
2. Change the input condition to IDLE in page 141 from:
sism * (pse_reset_pri + error_condition_pri + iclass_lim_det_pri)
To:
sism * (pse_reset_pri + error_condition_pri + iclass_lim_det_pri+class_error_pri)
3. repeat the above solution for the secondary.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.6** *P* **130** *L* **3** # r01-422

Darshan, Yair

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

Inconsistent information between option_class_probe variable in page 121 line 29 and do_class_probe function on page 130 line 3.
option_class_probe description indicates that PSE will issue exactly 3 class events to determine the PD requested class where do_class_probe description indicates that the PSE will issue a number of class events limited to CLASS_EV1_LCE to MARK_EV3.
For determine the PD requested power the PSE need to issue exactly 3 class events and not any number limited by 3.

*SuggestedRemedy*

Change page 130 line 3from:
"This functions discovers the PD requested Class by producing a number of class events. The class events produced are limited to CLASS_EV1_LCE to MARK_EV3. The tlce_timer in CLASS_EV1_LCE may be replaced with the tcle2_timer to allow abbreviated class timing duration. This function returns the following variables:"
To:
OThis functions discovers the PD requested Class by producing 3 class events. The class events produced are limited to CLASS_EV1_LCE to MARK_EV3. The tlce_timer in CLASS_EV1_LCE may be replaced with the tcle2_timer to allow abbreviated class timing durationO

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **135** *L* **33** # r01-423

Darshan, Yair

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

The condition from START_DETECT to DETECT_EVAL "!tdet_timer_done *
( (do_detect_pri_done * ( (det_temp = only_one) + (pse_alternative both)) ) +
(do_detect_sec_done * (pse_alternative = both) * (det_temp = both_neither) ))
" contains two sets of redundant parenthesis that make it hard to red.
If we replace the terms of the condition with letters we get: A*( [ B * (C + D) ] + [E * F * G ]
). The redundant parenthesis where replaced with rectangular parenthesis to show their locations.
No if we remove them, the logic is not changed and also the priority of the actions doesn't changed resulting with simplified and easy to read condition
A*( B*(C + D) + E*F*G ) that can be implement on the original condition.

*SuggestedRemedy*

Change from "!tdet_timer_done *
( (do_detect_pri_done * ( (det_temp = only_one) + (pse_alternative both)) ) +
(do_detect_sec_done * (pse_alternative = both) * (det_temp = both_neither) ))"

To: "!tdet_timer_done *
( do_detect_pri_done * ( (det_temp = only_one) + (pse_alternative both)) +
do_detect_sec_done * (pse_alternative = both) * (det_temp = both_neither) )"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **137** *L* **45** # r01-424

Darshan, Yair

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

This comment is marked GIL_1.
In the exit from CLASS_EV3 to MARK_EV3 we have the following condition:
tcev_timer_done * (pse_alternative = both) * (pd_class_sig 4) *
(pse_avail_pwr > 4) * ((pd_class_sig = 0) + (pse_avail_pwr > 5))

The part (pse_avail_pwr > 4) * ((pd_class_sig = 0) + (pse_avail_pwr > 5)) is logically identical to:
(pse_avail_pwr > 4)* (pd_class_sig = 0)+(pse_avail_pwr > 4)*(pse_avail_pwr > 5)
Few issues:
1) The part: (pse_avail_pwr > 4)*(pse_avail_pwr > 5) has the same meaning as (pse_avail_pwr > 5) resulting with keeping only (pse_avail_pwr > 5)
Now we have left with
((pse_avail_pwr > 4)* (pd_class_sig = 0)+(pse_avail_pwr > 5) ).
2) The part ((pse_avail_pwr > 4)* (pd_class_sig = 0)+(pse_avail_pwr > 5) ) is equivalent to (pse_avail_pwr >= 5) because we already meets
(pd_class_sig 4) and (pse_avail_pwr >= 5) resulting with the need to generate the 4th class event

*SuggestedRemedy*

change from:
tcev_timer_done * (pse_alternative = both) * (pd_class_sig 4) *
(pse_avail_pwr > 4) * ((pd_class_sig = 0) + (pse_avail_pwr > 5))
To:
tcev_timer_done * (pse_alternative = both) * (pd_class_sig 4) *
(pse_avail_pwr >= 5)

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **137** *L* **45** # r01-425

Darshan, Yair

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

This comment will be OBE to the comment marked GIL_1 if GIL_1 will be accepted.
In the exit from CLASS_EV3 to MARK_EV3 we have the following condition:
tcev_timer_done * (pse_alternative = both) * (pd_class_sig 4) *
(pse_avail_pwr > 4) * ((pd_class_sig = 0) + (pse_avail_pwr > 5))

The part (pse_avail_pwr > 4) * ((pd_class_sig = 0) + (pse_avail_pwr > 5)) is logically identical to:
(pse_avail_pwr > 4)* (pd_class_sig = 0)+(pse_avail_pwr > 4)*(pse_avail_pwr > 5) which mean:
(X>4)*(X>5) which is X>5.

*SuggestedRemedy*

Change from:
tcev_timer_done * (pse_alternative = both) * (pd_class_sig 4) *
(pse_avail_pwr > 4) * ((pd_class_sig = 0) + (pse_avail_pwr > 5))
to:
tcev_timer_done * (pse_alternative = both) * (pd_class_sig 4) *
( (pse_avail_pwr > 4) * (pd_class_sig = 0) + (pse_avail_pwr > 5) )

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **138** *L* **45** # r01-426

Darshan, Yair

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

In the exit from CLASS_EVAL to POWER_DENIED we have redundant parenthesis in the condition part that marked with $$ :
((pd_req_pwr > pse_avail_pwr) * (pse_avail_pwr < 3)) +
((pd_req_pwr = 0) * (pse_avail_pwr < 3)) +
$$(!ted_timer_done) + (!ted_timer_pri_done) + !ted_timer_sec_done $$.
The part : (!ted_timer_done) + (!ted_timer_pri_done) + !ted_timer_sec_done need to be !ted_timer_done + !ted_timer_pri_done + !ted_timer_sec_done

*SuggestedRemedy*

Change from "((pd_req_pwr > pse_avail_pwr) * (pse_avail_pwr < 3)) + ((pd_req_pwr = 0) * (pse_avail_pwr < 3)) +
(!ted_timer_done) + (!ted_timer_pri_done) + !ted_timer_sec_done."
To: ((pd_req_pwr > pse_avail_pwr) * (pse_avail_pwr < 3)) + ((pd_req_pwr = 0) * (pse_avail_pwr < 3)) + !ted_timer_done + !ted_timer_pri_done + !ted_timer_sec_done

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **139** *L* **33** # r01-427

Darshan, Yair

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

This comment is marked AVI_1.
In the exit from POWER_ON to SEMI_PWRON_SEC, the usage of alt_pwrd_sec may not be accurate since this signal is set prior to inrush while pwr_app_sec also address passing inrush successfully.
So it is recommended to replace the signal alt_pwrd_sec with pwr_app_sec because this signal indicates that the alternative is delivering power after passing the inrush check.

*SuggestedRemedy*

Replace the signal alt_pwrd_sec with pwr_app_sec

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **139** *L* **40** # r01-428

Darshan, Yair

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

in the exit from POWER_ON to ERROR_DELAY, the usage of alt_pwrd_sec may not be accurate (but it is good enugh in this case, however for consistency with comment AVI_1, it is better to change it too) since this signal is set prior to inrush while pwr_app_sec also address passing inrush successfully.

*SuggestedRemedy*

Replace the signal alt_pwrd_sec with pwr_app_sec.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **140** *L* **5** # r01-429

Darshan, Yair

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

The states SEMI_PWRON_PRI have unaligned rectangles.

*SuggestedRemedy*

To aligned both rectangular.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **140** *L* **5** # r01-430

Darshan, Yair

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

The text of the condition of the exit from SEMI_POWER_PRI to POWER_DENIDE is truncated.

*SuggestedRemedy*

Fix it to error_pri * !power_available

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **140** *L* **16** # r01-431

Darshan, Yair

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

The states SEMI_PWRON_SEC have unaligned rectangles.

*SuggestedRemedy*

To aligned both rectangular.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **141** *L* **8** # r01-432

Darshan, Yair

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

we need to set the sig_pri and sig_sec to FALSE in the top level state machine at IDLE state otherwise, we will have cross issues between two state machines parts.
Analysis:
When a single-signature is connected, ENTRY_PRI is processed continuously because "!sism" is TRUE which sets sig_pri to 'invalid' continuously, which breaks the main state diagram.
Same happen in the secondary.
To resolve it, we need to set the sig_pri and sig_sec to FALSE in the top state machine at idle state. This will also reset the signals for the single signature state machine, something that is not happening currently.

*SuggestedRemedy*

Add the following assignments to the IDLE state in page 135 line 7.:
sig_pri <==FALSE
sig_sec <== FALSE

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **141** *L* **12** # r01-433

Darshan, Yair

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

This comment is marked AVI_22.
In the ENTRY_PRI state, the variable "det_start_pri <== TRUE" is in the wrong place since we will be always in ENRY_PRI when !sism=TRUE which will set det_start_pri<==TURE even if we didn't do_detect_pri. We need to move it to the to state START_CXN_CHK_DETECT in page 135 line 47.
Other issue that ends with the same remedy for "det_start_sec <== TRUE" which is in wrong location in DETECT_EVAL_SEC state. The problem is that "det_start_sec <== TRUE" is set after do_detect_sec was done.

*SuggestedRemedy*

1. Move "det_start_pri <== TRUE" to state START_CXN_CHK_DETECT in page 135 line 47
2. Move "det_start_sec <== TRUE" to state START_CXN_CHK_DETECT in page 135 line 47

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **142** *L* **6** # r01-434

Darshan, Yair

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

In D3.1 we add the CLASSIFICATION_PRI and DO_CLASS_PROBE_PRI states for achieving some objectives, and after simulating some parts and analyzing the changes we did, we found some errors in state machine and variable definitions that need to be corrected. Same applies for secondary parts.

*SuggestedRemedy*

Adopt darshan_03_117.pdf

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **144** *L* **10** # r01-435

Darshan, Yair

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

The exits from CLASS_EVAL_PRI to POWER_DENIGED_PRI and POWER_UP_PRI doesn't contain the logics for power demotion.

*SuggestedRemedy*

1. Change the exit from CLASS_EVAL_PRI to POWER_DENIED_PRI from:
!ted_timer_pri_done + !ted_timer_done + (pd_req_pwr_pri > pse_avail_pwr_pri) + (!pd_4pair_cand * alt_pwrd_sec)
To:
!ted_timer_pri_done + !ted_timer_done + (pd_req_pwr_pri > pse_avail_pwr_pri) * (pse_avail_pwr_pri < 3) +
((pd_req_pwr_pri = 0) * (pse_avail_pwr_pri < 3)) + (!pd_4pair_cand * alt_pwrd_sec)
2. Change the exit from CLASS_EVAL_PRI to POWER_UP_PRI from:
ted_timer_pri_done * ted_timer_done * (pd_req_pwr_pri?? pse_avail_pwr_pri) * (pd_4pair_cand + !alt_pwrd_sec)
To:
ted_timer_pri_done * ted_timer_done * ( (pd_4pair_cand + !alt_pwrd_sec) + (pd_req_pwr_pri 0) * (pd_req_pwr_pri ?? pse_avail_pwr_pri) + (pse_avail_pwr_pri > 2) )

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **145** *L* **7** # r01-436

Darshan, Yair

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

This comment marked as AVI5.
In CC_DET_SEQ=3 and CC_DET_SEQ=2 the state machine can allow the secondary pair to power up (pri signature was valid) but primary fails in classification.
(Details: If sig_pri=valid and primary fails classification, it goes to IDLE_PRI. There is nothing in IDLE_PRI that resets sig_pri to invalid. Now secondary has valid detection and classification and powerup. If our intention is to not allow powering the secondary if primary fails to power up, then we need to add sig_pri=invalid to IDLE_PRI state.
Adding sig_pri<==invalid and sig_sec<==invalid in the IDLE_PRI and IDLE_SEC will resolve this issue. In addition, the lack of resetting sig_pri and sig_sec cause additional issues in simulations that are covered in other comments. See simulation results if needed in darshan_06_1117.pdf.

*SuggestedRemedy*

1. Add sig_pri<==invalid in the IDLE_PRI.
2. Add sig_sec<==invalid in the IDLE_SEC.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **145** *L* **15** # r01-437

Darshan, Yair

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

Missing parenthesis in CC_DET_SEQ=0 + CC_DET_SEQ=1

*SuggestedRemedy*

Change to (CC_DET_SEQ=0) + (CC_DET_SEQ=1)

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **145** *L* **22** # r01-438

Darshan, Yair

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

Missing parenthesis in CC_DET_SEQ=0 + CC_DET_SEQ=1

*SuggestedRemedy*

Change to (CC_DET_SEQ=0) + (CC_DET_SEQ=1)

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **145** *L* **30** # r01-439

Darshan, Yair

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

This comment marked as AVI6.
Similar setup as in AVI5, we get also the following issue:
in CC_DET_SEQ=2 the secondary pair will do 2 loops of detection classification before going to wait state. This problem was not exist in D3.0 and no we have it due to the changes made by http://www.ieee802.org/3/bt/public/sep17/stewart_02_0917_final.pdf on page 5 when we remove (CC_DET_SEQ=3) and (CC_DET_SEQ NE 3) from the exits of IDLE_SEC. Now the assignment det_once_sec=TRUE is not exists if we came from ENTRY_SEC to DETECT_EVAL_SEC as a result we have now the above issue. See simulation results if needed in darshan_06_1117.pdf.

*SuggestedRemedy*

Add to DETECT_EVAL_SEC the condition det_one_sec=TRUE.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **148** *L* **10** # r01-440

Darshan, Yair

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

The exits from CLASS_EVAL_SEC to POWER_DENIGED_SEC and POWER_UP_SEC doesn't contain the logics for power demotion.

*SuggestedRemedy*

1. Change the exit from CLASS_EVAL_SEC to POWER_DENIGED_SEC from:
!ted_timer_sec_done + !ted_timer_done + (pd_req_pwr_sec > pse_avail_pwr_sec) + (!pd_4pair_cand * alt_pwrd_pri)
To:
!ted_timer_sec_done + !ted_timer_done + (pd_req_pwr_sec > pse_avail_pwr_sec) * (pse_avail_pwr_sec < 3) +
((pd_req_pwr_sec= 0) * (pse_avail_pwr_sec < 3)) + (!pd_4pair_cand * alt_pwrd_pri)
2. Change the exit from CLASS_EVAL_SEC to POWER_UP_SEC from:
ted_timer_sec_done * ted_timer_done * (pd_req_pwr_sec?? pse_avail_pwr_sec) * (pd_4pair_cand + !alt_pwrd_pri)
To:
ted_timer_sec_done * ted_timer_done * ( (pd_4pair_cand + !alt_pwrd_pri) + (pd_req_pwr_sec 0) * (pd_req_pwr_sec ?? pse_avail_pwr_sec) + (pse_avail_pwr_sec > 2) )

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8** *P* **162** *L* **15** # r01-441

Darshan, Yair

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

ILIM_2P numbers need to in sync to Icon-2P_unb and Ipeak-2P_unb after latest changes in Icon-2P_unb values.

*SuggestedRemedy*

Adopt darshan_05_1117.pdf

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8** *P* **163** *L* **28** # r01-442

Darshan, Yair

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

The note (a) belongs to Icon-2P_unb as it was in D3.0

*SuggestedRemedy*

Change Note a from "aThe IUnbalance-2P value is higher than the value for Class 5 as unbalance for Class 4 is not restricted."
To: "aThe Icon-2P_unb value is higher than the value for Class 5 as unbalance for Class 4 is not restricted."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.5** *P* **164** *L* **43** # r01-443

Darshan, Yair

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

Modified comment from i-204 in D3.0.
In the text "PSEs shall be able to source ICon-2P, the current the PSE supports on each powered pairset, as defined in Equation (145-8).".
The text says that Icon-2P is the current that the PSE must support on each pair set per Eq 145-8. This current cannot be calculated per Equation 145-8 since Iport-2P_other has no numerical definition or can be calculated per the data in the spec as we do for all our equations in the spec. One may ask why we need to calculate it? The answer is because it is a spec and we cannot leave spec parameter/equation that has no solution. Otherwise why to spec it if it not needed?

*SuggestedRemedy*

In the definition of Iport-2P_other in the where list of Equation 145-8 append the following text to the existing definition:
"Iport-2P_other can be found by the measurement of the current difference between two pairs of the same polarity when PSE is connected to the test verification model and its operating conditions as described in 145.2.8.5.1"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.5.1** *P* **166** *L* **29** # r01-444

Darshan, Yair

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

Table 145-17 has values that are the same as the values for Icon-2P_unb in Table 145-16. This intention of adding Iunbalance and Table 145-17 was to clearly specify what is minimum value of the current that PSE has to source and what is to maximum value of the current during unbalance conditions that PSE and PD should not cross. For this purpose, it is sufficient to define that Iunbalance-2P=Icon-2P_unb+2mA. This will set clear boundary between min/max values of these two parameters and also result with simpler spec.

*SuggestedRemedy*

In Table 145-17 make the following changes:
1) In the 2nd row, in the assigned class column change from "5" to "5 to 8".
2) In the 2nd row, in the Value column change from "0.56" to "Iunbalance-2P=Icon-2P_unb+0.002".
3) Delete rows 4-6.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.5.1** *P* **167** *L* **36** # r01-445

Darshan, Yair

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

It is not clear in the following text to what the power sink is correctly need to be set "The load resistances Rload_min and Rload_max are split into two series resistances Rload1_min and Rload2_min, and Rload1_max and Rload2_max respectively, as shown in Figure 145-
22, to correctly be able to set the power sink.". The power sink need to be adjusted to get Pclass-PD at the load.

*SuggestedRemedy*

Change from "The load resistances Rload_min and Rload_max are split into two series resistances Rload1_min and Rload2_min, and Rload1_max and Rload2_max respectively, as shown in Figure 145-22, to correctly be able to set the power sink."
To:
"The load resistances Rload_min and Rload_max are split into two series resistances Rload1_min and Rload2_min, and Rload1_max and Rload2_max respectively, as shown in Figure 145-22, to correctly be able to set the power sink to generate Pclass_PD at the input of Pload."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.5.1** *P* **167** *L* **49** # r01-446

Darshan, Yair

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

The wording is not clear in the text "Rload2_max is, given Rload2_min, the higher resistance value representing the PD unbalance". Rload2_max represents the PD contribution to unbalance and not unbalance.

*SuggestedRemedy*

Change from "Rload2_max is, given Rload2_min, the higher resistance value representing the PD unbalance"
To: "Rload2_max is, given Rload2_min, the higher resistance value representing the PD contribution to unbalance"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.5.1** *P* **167** *L* **50** # r01-447

Darshan, Yair

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

The wording is not clear in the text "Rload2_min is the lowest resistance representing the PD unbalance". Rload2_min represents the PD contribution to unbalance and not unbalance.

*SuggestedRemedy*

Change from: "Rload2_min is the lowest resistance representing the PD unbalance".
To: "Rload2_min is the lowest resistance representing the PD contribution to unbalance".

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.8.12** *P* **173** *L* **15** # r01-448

Darshan, Yair

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

Equation 145-22 accuracy need to be addressed. See proposed changes in darshan_04_1117.pdf.

*SuggestedRemedy*

Adopt darshan_04_1117.pdf

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.4** *P* **178** *L* **39** # r01-449

Darshan, Yair

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

The variable nopower is not clearly defined in the following text:
"A variable that indicates the PD has been in NOPOWER, which indicates VPD was below VOff_PD
while being powered, since the last time VPD was below VReset for at least TReset.
Values:
FALSE: The PD has not been in NOPOWER.
TRUE: The PD has been in NOPOWER.". Few issues:
1. VReset need to be VReset_PD.
2. Better text needed to clarify where it is used (How we can be below VOff_PD while being powered? we where in a powering state actually)

*SuggestedRemedy*

1. Change to:
"nopower
"A variable that indicates the PD has been in NOPOWER, which indicates VPD was below VOff_PD
while being in powering state, since the last time VPD was below VReset for at least TReset.
Values:
FALSE: The PD has not been in NOPOWER.
TRUE: The PD has been in NOPOWER."
2. The nopower_mode(X) variable is missing from the variable list. This is covered by the comment marked nopower_mode(X). If this comment will be accepted, to make sure that similar language are used in both variables.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.4** *P* **178** *L* **39** # r01-450

Darshan, Yair

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

This comment is marked nopower_mode(X).
The variable nopower_mode(X) is missing from the variable list.

*SuggestedRemedy*

Add the following variable to 145.3.3.4
nopower_mode(X)
A variable that indicates the PD has been in NOPOWER over mode (X), which indicates VPD was below VOff_PD while being in powering state, since the last time VPD was below VReset_PD for at least TReset.
Values:
FALSE: The PD has not been in NOPOWER.
FALSE: The PD has been in NOPOWER.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **178** *L* **44** # r01-451

Darshan, Yair

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

In the nopower variable text: Typo in the text "FALSE: The PD has been in NOPOWER." It should be "TRUE: The PD has been in NOPOWER."

*SuggestedRemedy*

Change from "FALSE: The PD has been in NOPOWER."
To: "TRUE: The PD has been in NOPOWER."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.7** *P* **184** *L* **30** # r01-452

Darshan, Yair

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

The PD state machine for single signature (and dual signature) has few issues concerning NOPOWER state and going back to INRUSH and back to POWER_DELAY.
1) Violation of tpowerdelay_timer when going from POWER_DELAY to NOPOWER.
2) Possible overload condition due to the assignment of (pse_power_level <== 8).
3) Allowing incompliant behavior of PDs that doesnOt lock their class event counter and sensitive to 2nd inrush counted as additional class event (I understand the need for this but we need to allow it as optional behavior and not mandatory behavior for PDs. For example: If PD didnOt lost its data when going to Vpd < Voff_pd, it doesnOt need to set (pse_power_level <== 8) in NOPOWER spec so the correct assigned class will not be destroyed.
Details of issue 1:
When actual Tinrush_PD<25msec and transitioning from POWER_DELAY to NOPOWER state due to VPD<VOff_PD, sets nopower variable to TRUE.
nopower variable=TRUE will lead to bypassing tpowerdelay_timer (80msec) when returning back to POWERED through INRUSH and POWER_DELAY states which will lead to PD overloading the PSE which is still in INRUSH state. (The 25msec number is due to the fact that we are going through INRUSH state twice in the above scenario)
This scenario happens whenever Vpd is lowered below Voff_pd in POWER_DELAY or POWERED states, causing a transition to NOPOWER state, then raised above Von_pd (regardless of the time VPD was below Voff_pd).
In the case where Tinrush_PD = 0 to 25ms, then the PD state-machine will do the transition from INRUSH to POWER_DELAY to NOPOWER to INRUSH to POWER_DELAY to POWERED in 2xTirush_PD.
This is a violation of Tdelay, which is minimum 80ms and may overload PSE by PD during INRUSH.
Same issue in dual-signature PD state machine.
Details of issue 2:
In the NOPOWER state, the assignment "pse_power_level <==8" will cause PD to have pse_available_power=8 even if originally prior to getting to NOPOWER state is was lower than 8.
As long as VPD>VReset_th, PD remembers its data. In the arguments why we add it in the past, it was claimed that PD may think that we have additional class event when transitioning from NOPOWER to INRUSH again. This argument seems not correct since PD required by spec to lock itself to ignore additional counts after first time going through inrush. Any way, we have big hole here.
Regarding PDs that doesn't lock class event counting, they are not compliant. I understand that we want to support this case in the field as well so we need to make the use of pse_available_power=8 optional as function if we lost the data or not i.e. compliant PDs will not have to do it otherwise they may go to overload conditions while they behaves correctly.
In addition, we need to add text that explains that the NOPOWER state was meant to be use for abnormal use cases and not as the typical behaviour otherwise we by pass the mandory requirements of the spec.
Bottom line: We have tried to allow supporting non-compliant PDs or PDs that their behavior is not defined by making the state machine to support those PDs but on the way we create problems that compliant PDs doesnOt have and we force them to behave in noncompliant way by violating other spec requirements.
Below is proposal to support those PDs without creating problems to PDs that behaves correctly.

*SuggestedRemedy*

1. In the exit from POWER_DELAY to NOPOWER and in the exit from POWERED to NOPOWER, change the condition from VPD < VOff_PD to (VPD < VOff_PD)*go2nopower.
2. Add the new variable go2nopower:
go2nopower
Implementation specific variable that indicates if PD will go to NOPOWER in case VPD < VOff_PD during POWER_DELAY or POWERED.
Values
FALSE PD will not use NOPOWER in case VPD < VOff_PD during POWER_DELAY or POWERED
TRUE PD will use NOPOWER in case VPD < VOff_PD during POWER_DELAY or POWERED
3. Repeat only steps 1 for dual-signature PD in page 190 for the above states.
4. [This solution allow not using pse_power_level <==8 in case PD didn't lost its data or change its data during the transition to POWER_DELAY through NOPOWER)]
Append the following text to the definition of nopower variable:
"If pse_power_level data was not lost or changed in the event of transitioning to POWER_DELAY through NOPOWER, the assignment pse_power_level<==8 may not be implemented in NOPOWERO

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.7** *P* **184** *L* **38** # r01-453

Darshan, Yair

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

Missing parenthesis in POWERED state in pd_req_class > 3

*SuggestedRemedy*

Replace "IF (pd_req_class > 3 + pd_dll_capable) THEN"
To: "IF ((pd_req_class > 3) + pd_dll_capable) THEN"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.9** *P* **186** *L* **11** # r01-454

Darshan, Yair

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

The variable pd_current_limit_mode(X) should not be used. See other comments where it was deleted from the state machine.

*SuggestedRemedy*

Remove the variable pd_current_limit_mode(X) from the variable list in 145.3.3.9

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.12** *P* **190** *L* **8** # r01-455

Darshan, Yair

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

In the exit from INRUSH to POWER_DELAY: Typo in timer name. Need to be tinrushpd_timer_done_mode(X) and not tinrush_timer_done_mode(X)

*SuggestedRemedy*

Change from "tinrush_timer_done_mode(X)" to "tinrushpd_timer_done_mode(X)"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.12** *P* **190** *L* **10** # r01-456

Darshan, Yair

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

In the state INRUSH, pd_current_limit_mode(X) is not required.

*SuggestedRemedy*

Remove "pd_current_limit_mode(X) < FALSE" from INRUSH state.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.12** *P* **190** *L* **13** # r01-457

Darshan, Yair

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

In the state POWER_DELAY, pd_current_limit_mode(X) is not required.

*SuggestedRemedy*

Remove "pd_current_limit_mode(X) < FALSE" from POWER_DELAY state.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.12** *P* **190** *L* **20** # r01-458

Darshan, Yair

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

In the state POWERED, pd_current_limit_mode(X) is not required.

*SuggestedRemedy*

Remove "pd_current_limit_mode(X) < FALSE" from INRUSH state.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.3.12** *P* **190** *L* **29** # r01-459

Darshan, Yair

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

In the state POWER_UPDATE, pd_power_update_mode(X) is not required.

*SuggestedRemedy*

Remove "pd_power_update_mode(X) < FALSE" from POWER_UPDATE state.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.6.2** *P* **196** *L* **46** # r01-460

Darshan, Yair

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

In the text "After power up, a PD that implements Autoclass shall draw its highest required power, PAutoclass_PD, subject
to the requirements on PClass_PD in 145.3.8.2, throughout the period bounded by....." we have the following issue:
According to the existing Autoclass text In 145.3.8.2 the text says that the limits of the autoclass power value is the assigned class. This may generate an overload condition according to the following example:
1) When we negotiate power through LLDP and we asked for 34W and received 34W. The assigned class will be 5 per table 145-12.
2) Now the PD requests Autoclass through LLDP and consumes 39W (it can consume more, up to the maximum of the assigned class=40W).
3) PSE will enter to overload condition/overpower and may shut the port off.
Possible solutions:
a) The fix for this is to limit autoclass power not according to the assigned class but to limit it to the PSE allocated power which is in the above example 34W and not 40W.
b) (Preferred, simpler) To keep it per the assigned class when layer 1 autoclass is used and limit the value of the autoclass power to the pse allocated power when autoclass is used through LLDP.

*SuggestedRemedy*

Change from:
"After power up, a PD that implements Autoclass shall draw its highest required power, PAutoclass_PD, subject to the requirements on PClass_PD in 145.3.8.2, throughout the period bounded by TAUTO_PD1 and TAU-TO_PD2, measured from when VPD rises above VPort_PD-2P min. The PD shall not draw more power than PAutoclass_PD at any point until VPD falls below VReset_PD max, unless the PD successfully negotiates a higher power level, up to the PD requested Class, through Data Link Layer classification as defined in 145.5."
To:
"After power up, a PD that implements Autoclass shall draw its highest required power, PAutoclass_PD, subject to the requirements on PClass_PD in 145.3.8.2, throughout the period bounded by TAUTO_PD1 and TAU-TO_PD2, measured from when VPD rises above VPort_PD-2P min.
When using Autoclass through LLDP, a PD that implements Autoclass shall draw its highest required power, PAutoclass_PD, up to PSEAllocatedPowerValue, throughout the period bounded by TAUTO_PD1 and TAU-TO_PD2, measured from the time MirroredPDAutoclassRequest is TRUE.
The PD shall not draw more power than PAutoclass_PD at any point until VPD falls below VReset_PD max, unless the PD successfully negotiates a higher power level, up to the PD requested Class, through Data Link Layer classification as defined in 145.5."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8.9** *P* **205** *L* **24** # r01-461

Darshan, Yair

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

Missing link to Annex 145A.

*SuggestedRemedy*

Append the text "See Annex 145 for details" after line 24

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.3.8** *P* **207** *L* **22** # r01-462

Darshan, Yair

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

Per the latest changes we did to include Equipment connector in the PSE PI and in the PD PI for unbalance tests, Figure 145-31 and NOTE 1 in line 33 need some adjustments.

*SuggestedRemedy*

Adopt darshan_01_1117.pdf

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.4.1.1.1** *P* **210** *L* **7** # r01-463

Darshan, Yair

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

To ensure proper operation of connection check and detection, we need to require that PSE measures the current on the same side it switches the current
(We have already a requirement that PSE will switch the current on the negative side. Switching the positive side is possible as an option but not instead of the negative side).
The PD must show valid detection on each pairset set per the dual-signature definitions when connected to the PSE above.
As a result, we don't need to require dual-sigs to not tie negatives together however if we do, it surely make the standard clearer.
In addition 79.3.2.6d.3 needs updated and will be addressed in separate comment marked as PDISO-1.

*SuggestedRemedy*

1) On page 210 line 7, change from:
"An Environment A PSE shall switch the more negative conductor. It is allowed to switch both conductors."
To: "An Environment A PSE shall switch the more negative conductor and shall measure the current through it. It is allowed to switch both conductors."
2) On page 210 line 18, change from:
"An environment B PSE that supports 4-pair power shall switch the more negative conductor. It is allowed to switch both conductors."
To:
"An environment B PSE that supports 4-pair power shall switch the more negative conductor and shall measure the current through it. It is allowed to switch both conductors."
3) On page 209 clause 145.4.1 after line 38, add the following text: ODual-signature PDs shall not tie the negative pairs during detection and classification states.O

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.4.4** *P* **213** *L* **12** # r01-464

Darshan, Yair

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

After adding 2.5/5/10G we need to update the maximum frequency range in the text "**Capacitor impedance less than 1 ohm from 1 MHz to 100 MHz"

*SuggestedRemedy*

Change from" **Capacitor impedance less than 1 ohm from 1 MHz to 100 MHz"
To: "**Capacitor impedance less than 1ohmrom 1 MHz to maximum operating frequency of the device."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.4.4** *P* **213** *L* **21** # r01-465

Darshan, Yair

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

The text "1) For a PSE, the PI that supplies power is terminated as illustrated in Figure 145-35. The PSE load, R, in Figure 145-35 is adjusted so that the PSE output current, Iout, is 10 mA and then 350 mA, while measuring Ecm_out on the PI." was good for 802.3af when we had only 350mA. Need to adjust it to Icon or Icon-2P.

*SuggestedRemedy*

Change from: "1) For a PSE, the PI that supplies power is terminated as illustrated in Figure 145-35. The PSE load, R, in Figure 145-35 is adjusted so that the PSE output current, Iout, is 10 mA and then 350 mA, while measuring Ecm_out on the PI."
To: "1) For a PSE, the PI that supplies power is terminated as illustrated in Figure 145-35. The PSE load, R, in Figure 145-35 is adjusted so that the PSE output current, Iout, is 10 mA and then Icon for single-signature PD or Icon-2P on each pairset for dual-signature PD, while measuring Ecm_out on the PI."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.4.4** *P* **214** *L* **33** # r01-466

Darshan, Yair

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

After adding 2.5/5/10G we need to update the maximum frequency range in the text "**Capacitor impedance less than 1 ohm from 1 MHz to 100 MHz"

*SuggestedRemedy*

Change from" **Capacitor impedance less than 1 ohm from 1 MHz to 100 MHz"
To: "**Capacitor impedance less than 1ohmrom 1 MHz to maximum operating frequency of the device."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.4.6** *P* **215** *L* **39** # r01-467

Darshan, Yair

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

The coupled noise of 1mV for 2.5GHz to 10GHz is too small.

*SuggestedRemedy*

Change to 2mV

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.5.5.52** *P* **226** *L* **28** # r01-468

Darshan, Yair

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

In the pse_power_review function definition, missing "or changes in PD requested power value" to the text "This function evaluates the power allocation or budget of the PSE based on local system changes.". See for reference how pd_power_review is defined.

*SuggestedRemedy*

Change from " "This function evaluates the power allocation or budget of the PSE based on local system changes.""
To: "This function evaluates the power allocation or budget of the PSE based on local system changes or changes in PD requested power value."

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.5.3.3.2** *P* **226** *L* **28** # r01-469

Darshan, Yair

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

pse_power_review is a function of local system changes but also PD requested power value

*SuggestedRemedy*

Change from:
"This function evaluates the power allocation or budget of the PSE based on local system changes.
The function returns the following variables:"
To: "This function evaluates the power allocation or budget of the PSE based on local system changes PD requested power value."

*Proposed Response* *Response Status* **O**

*Cl* **145A** *SC* **145A.2** *P* **275** *L* **25** # r01-470

Darshan, Yair

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

Title is not accurate. Change from "Unbalance overview" to "Pair-to-pair unbalance overview"

*SuggestedRemedy*

Change from "Unbalance overview" to "Pair-to-pair unbalance overview"

*Proposed Response* *Response Status* **O**

*Cl* **145A** *SC* **145A.4** *P* **277** *L* **44** # r01-471

Darshan, Yair

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

After the last changed for D3.1, The link should be figure 145A-1 and not Figure 145-22.

*SuggestedRemedy*

Change from " Figure 145-22" to "Figure 145A-1".

*Proposed Response* *Response Status* **O**

*Cl* **145A** *SC* **145A.4** *P* **277** *L* **50** # r01-472

Darshan, Yair

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

Missing link to Figure 145-22 in the text: "PSE current unbalance requirements need to be met with Rload_max and Rload_min applied as defined in
Equation (145-14), Equation (145-15), and Table 145-18. A compliant unbalanced load, Rload_min and Rload_max, consists of the link section and PD effective resistances, including the effects (or influence) of system end-to-end unbalance."

*SuggestedRemedy*

Change to: "PSE current unbalance requirements need to be met with Rload_max and Rload_min applied as defined in Equation (145-14), Equation (145-15), and Table 145-18. A compliant unbalanced load, Rload_min and Rload_max, consists of the link section and PD effective resistances, including the effects (or influence) of system end-to-end unbalance. See Figure 145-22, Figure 145A-1 and Figure 145A-3 for details."

*Proposed Response* *Response Status* **O**

*Cl* **145A** *SC* **145A.5** *P* **278** *L* **3** # r01-473

Darshan, Yair

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

Missing information in the annex. Append text that PSE pair to pair voltage difference was limited to 10mV max for the current spec numbers.

*SuggestedRemedy*

Add the following text after line 3:
"PSE pair-to-pair voltage difference is specified by Vport_PSE-2P in table 145-16."

*Proposed Response* *Response Status* **O**

*Cl* **145A** *SC* **145A.5** *P* **278** *L* **46** # r01-474

Darshan, Yair

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

Missing information in the annex. Append text that PD pair to pair voltage difference was limited to 60mV max for the current spec numbers.

*SuggestedRemedy*

Add the following text after line 46:
"PD pair-to-pair voltage difference e.g. Vf1-Vf3 was limited to 60mV to get the spec for Icon-2P_unb under worst case conditions."

*Proposed Response* *Response Status* **O**

*Cl* **145B** *SC* **145B.1** *P* **281** *L* **21** # r01-475

Darshan, Yair

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

For clarity, to add drawings to Annex 145B.1 demonstrating the definition of parallel/staggered detection

*SuggestedRemedy*

Adopt darshan_02_1117.pdf

*Proposed Response* *Response Status* **O**

*Cl* **145B** *SC* **145B.1.3** *P* **283** *L* **32** # r01-476

Darshan, Yair

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

The text "Figure 145B-8 illustrates a PSE implementing CC_DET_SEQ=2 when the connection check result is dual and pd_4pair_cand is initially TRUE." is incorrect. "pd_4pair_cand is initially TRUE" should be "class_4PID_mult_events_pri or class_4PID_mult_events_sec is TRUE"

*SuggestedRemedy*

Change from: "Figure 145B-8 illustrates a PSE implementing CC_DET_SEQ=2 when the connection check result is dual and pd_4pair_cand is initially TRUE."
To: "Figure 145B-8 illustrates a PSE implementing CC_DET_SEQ=2 when the connection check result is dual and class_4PID_mult_events_sec is TRUE."

*Proposed Response* *Response Status* **O**

*Cl* **145B** *SC* **145B.1.3** *P* **283** *L* **45** # r01-477

Darshan, Yair

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

In "Figure 145B-8NPSE implementing CC_DET_SEQ=2, do_cxn_chk result is dual, simultaneous power on". remove the text "simultaneous power on" which may be incorrect for dual-signature PD case.

*SuggestedRemedy*

remove the text "simultaneous power on" which may be incorrect for dual-signature PD case

*Proposed Response* *Response Status* **O**

*Cl* **145B** *SC* **145B.1.3** *P* **284** *L* **2** # r01-478

Darshan, Yair

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

The text "Figure 145B-9 illustrates a PSE implementing CC_DET_SEQ=2 when the connection check result is dual and pd_4pair_cand is initially FALSE." is incorrect. "pd_4pair_cand is initially TRUE" should be "class_4PID_mult_events_pri or class_4PID_mult_events_sec is TRUE"

*SuggestedRemedy*

Change from: "Figure 145B-9 illustrates a PSE implementing CC_DET_SEQ=2 when the connection check result is dual and pd_4pair_cand is initially FALSE."
To: "Figure 145B-9 illustrates a PSE implementing CC_DET_SEQ=2 when the connection check result is dual and class_4PID_mult_events_sec is TRUE."

*Proposed Response* *Response Status* **O**

*Cl* **145B** *SC* **145B.1.4** *P* **284** *L* **34** # r01-479

Darshan, Yair

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

The text "Figure 145B-11 illustrates a PSE implementing CC_DET_SEQ=3 when the connection check result is dual." is incomplete.

*SuggestedRemedy*

Change from: ""Figure 145B-11 illustrates a PSE implementing CC_DET_SEQ=3 when the connection check result is dual." "
To: "Figure 145B-11 illustrates a PSE implementing CC_DET_SEQ=3 when the connection check result is dual and class_4PID_mult_events_sec is FALSE."

*Proposed Response* *Response Status* **O**

*Cl* **145B** *SC* **145B.1.4** *P* **285** *L* **51** # r01-480

Darshan, Yair

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

Figure 145B-14 to change Tlce2 and Tlce3 to TCEV

*SuggestedRemedy*

Figure 145B-14 to change Tlce2 and Tlce3 to TCEV

*Proposed Response* *Response Status* **O**

*Cl* **145C** *SC* **145C.1** *P* **287** *L* **28** # r01-481

Darshan, Yair

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

Figure 145C-1. It is 25.5 W and not 25 W.

*SuggestedRemedy*

Change the load to 25.5 W.

*Proposed Response* *Response Status* **O**

*Cl* **145C** *SC* **145C.1** *P* **288** *L* **8** # r01-482

Darshan, Yair

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

Figure 145C-2. It is 25.5 W and not 25 W.

*SuggestedRemedy*

Change the load to 25.5 W.

*Proposed Response* *Response Status* **O**

*Cl* **145C** *SC* **145C.3** *P* **289** *L* **46** # r01-483

Darshan, Yair

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

Typo. Remove "/m" from the value "0.3 ohm"

*SuggestedRemedy*

Remove "/m" from the value "0.3 ohm"

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **144** *L* **10** # r01-484

Darshan, Yair

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

This is similar ot earlier comment but with updated remedy.
The exits from CLASS_EVAL_PRI to POWER_DENIGED_PRI and POWER_UP_PRI doesn't contain the logics for power demotion.

*SuggestedRemedy*

1. Change the exit from CLASS_EVAL_PRI to POWER_DENIGED_PRI from:
!ted_timer_pri_done + !ted_timer_done + (pd_req_pwr_pri > pse_avail_pwr_pri) + (!pd_4pair_cand * alt_pwrd_sec)
To:
!ted_timer_pri_done + !ted_timer_done + (pd_req_pwr_pri > pse_avail_pwr_pri) * (pse_avail_pwr_pri < 3) +
((pd_req_pwr_pri = 0) * (pse_avail_pwr_pri < 3)) + (!pd_4pair_cand * alt_pwrd_sec)
2. Change the exit from CLASS_EVAL_PRI to POWER_UP_PRI from:
ted_timer_pri_done * ted_timer_done * (pd_req_pwr_pri ?? pse_avail_pwr_pri) * (pd_4pair_cand + !alt_pwrd_sec)
To:
ted_timer_pri_done * ted_timer_done * ( (pd_4pair_cand + !alt_pwrd_sec) + (pd_req_pwr_pri 0) * (pd_req_pwr_pri ?? pse_avail_pwr_pri) + (pse_avail_pwr_pri > 2) )

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.5.7** *P* **148** *L* **10** # r01-485

Darshan, Yair

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

This is similar ot earlier comment but with updated remedy.
The exits from CLASS_EVAL_SEC to POWER_DENIGED_SEC and POWER_UP_SEC doesn't contain the logics for power demotion.

*SuggestedRemedy*

1. Change the exit from CLASS_EVAL_SEC to POWER_DENIGED_SEC from:
!ted_timer_sec_done + !ted_timer_done + (pd_req_pwr_sec > pse_avail_pwr_sec) + !pd_4pair_cand
To:
!ted_timer_sec_done + !ted_timer_done +
(pd_req_pwr_sec > pse_avail_pwr_sec) * (pse_avail_pwr_sec < 3) +
((pd_req_pwr_sec= 0) * (pse_avail_pwr_sec < 3)) + !pd_4pair_cand

2. Change the exit from CLASS_EVAL_SEC to POWER_UP_SEC from:
ted_timer_sec_done * ted_timer_done * (pd_req_pwr_sec ?? pse_avail_pwr_sec) * pd_4pair_cand )
To:
ted_timer_sec_done * ted_timer_done * pd_4pair_cand *
((pd_req_pwr_sec 0) * (pd_req_pwr_sec ?? pse_avail_pwr_sec) + (pse_avail_pwr_sec > 2) )

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1.5** *P* **36** *L* **19** # r01-486

Thompson, Geoffrey Individual

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

LATE COMMENT: As I understand the rules for management, it is improper and not permissible to change the behavior of a management object. Thus it is improper to delete two of the enumerated values of an established object. I do understand the desired to not have a test mode.

*SuggestedRemedy*

Restore the two deleted enumerated values and add text to those two that says 'Not supported for clause 145 operation'.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1.6** *P* **37** *L* **51** # r01-487

Thompson, Geoffrey Individual

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

LATE COMMENT: As I understand the rules for management, it is improper and not permissible to change the behavior of a management object. Thus it is improper to delete or change the behavior as shown.

*SuggestedRemedy*

Limit the changes to amend.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.9.1.1.7a** *P* **41** *L* **24** # r01-488

Thompson, Geoffrey Individual

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

LATE COMMENT: Balloting draft seems to be OK. Compare doc does not seem to match balloting draft.

*SuggestedRemedy*

Make sure compare doc is correct next time.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.2.1.9** *P* **41** *L* **46** # r01-489

Thompson, Geoffrey Individual

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

LATE COMMENT: Wording does not conform to standards norms.

*SuggestedRemedy*

Change 'can' to 'may'.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.2.1.18** *P* **43** *L* **4** # r01-490

Thompson, Geoffrey Individual

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

LATE COMMENT: RE: 'in units of 0.1 W.' Would that be expressed in straight binary or BCD?

*SuggestedRemedy*

Clarify.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.2.1.18p** *P* *L* # r01-491

Thompson, Geoffrey Individual

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

LATE COMMENT: I'm completely lost here. I'm looking at the compare doc and it looks like what is being done is comepletely improper. (You can't change an existing attribute from a bit string to enumerated.) When I look at the same clause # in the balloting doc it is nowhere near the same.

*SuggestedRemedy*

Make sure compare doc is correct next time. If it isn't correct it does more harm than good.

*Proposed Response* *Response Status* **O**

*Cl* **30** *SC* **30.12.2.1.18q** *P* *L* # r01-492

Thompson, Geoffrey Individual

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

LATE COMMENT: As I understand the rules for management, it is improper and not permissible to change the behavior of a management object. Thus it is improper to delete or change the behavior as shown.

*SuggestedRemedy*

Undo change.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.1** *P* **103** *L* **16** # r01-493

Thompson, Geoffrey Individual

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

LATE COMMENT: Improve clarity of sentence.

*SuggestedRemedy*

Change text: 'The interface between each of the elements is called the Power Interface (PI).' to: 'The interface between each of the power elements is called the Power Interface (PI).'

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.1** *P* **103** *L* **17** # r01-494

Thompson, Geoffrey Individual

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

LATE COMMENT: Improve clarity of text.

*SuggestedRemedy*

Swap order of PD sentence and link section sentence.

*Proposed Response* *Response Status* **O**

*Cl* **145** *SC* **145.2.3** *P* **108** *L* **14** # r01-495

Thompson, Geoffrey Individual

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

LATE COMMENT: Line breaks within a term.

*SuggestedRemedy*

Use non-breaking dash or an early required return.

*Proposed Response* *Response Status* **O**