Cl **0** *SC* **0** *P* *L* # r03-1

Anslow, Peter — Ciena Corporation

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

The base_year variable appears to be set correctly as 201x in the front matter, but is incorrect as 2018 in all of the other clause files

SuggestedRemedy

Change the base_year variable to 201x for all files in the draft.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **FM** *SC* **FM** *P* *L* # r03-2

Anslow, Peter — Ciena Corporation

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

The copyright_year variable is set to 2017 in the table of contents file

SuggestedRemedy

Change the copyright_year variable to 2018 for the table of contents file.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1** *P* **1** *L* **1** # r03-64

Yseboodt, Lennart — Philips Lighting

Comment Type **GR** *Comment Status* **D**

*** Comment submitted with the file 96117100003-yseboodt_01_0318_current.pdf attached ***

This comment includes yseboodt_01.

SuggestedRemedy

NA

Proposed Response *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

This comment was withdrawn before the start of comment resolution.

Cl **FM** *SC* **FM** *P* **23** *L* **4** # r03-3

Anslow, Peter — Ciena Corporation

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

"Amendment:" should be "Amendment 2:"

SuggestedRemedy

Change "Amendment:" to "Amendment 2:"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.4.288a** *P* **24** *L* **22** # r03-4

Anslow, Peter — Ciena Corporation

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

Comment i-36 against the revision project D3.0 has caused the definition of "FORCE mode" in 1.4.254 to be deleted.
As a consequence of this, all of the definition numbers above 254 have reduced their numbering by 1.

SuggestedRemedy

Change all definition numbers in the draft above 1.4.254 down by 1 in both the editing instructions and the definition numbers.
For example,
"Insert 1.4.288a after 1.4.288 "Idle mode" as follows:" becomes:
"Insert 1.4.287a after 1.4.287 "Idle mode" as follows:"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.4.254** *P* **24** *L* **30** # r03-98

Thompson, Geoffrey Individual

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

The resolution of Thompson comment put into D3.3 is essentially a REJECT of D3.2 Comment r02-85.
The text in D3.3 cl. 1.4.309 is not a satisfactory resolution of Comment r02-85.
The text in D3.3 cl. 1.4.309 is not technically correct in the full context of IEEE Std 802.3 which is the scope of the proposed definition.

Your definition
"link section: The portion of the link segment from the PSE to the PD"
is dependent on being a subset of the following definition
"1.4.290 link segment: The point-to-point full-duplex medium connection between two and only two Medium Dependent Interfaces (MDIs)."

In a clause 33 Type 1/2 instance with a midspan PSE, the link section is entirely separate from the link segment.
Reference: P802.3cj/D3.0, Figure 33-6--10BASE-T/100BASE-TX Midspan PSE location overview, Alternative B

SuggestedRemedy

Delete the change to the definition of "link section" from the P802.3bt draft and leave the definition of "link section" in P802.3Rev (P802.3cj)/D3 unchanged.

Proposed Response *Response Status* **W**

TFTD

Cl **1** *SC* **1.4.454a** *P* **25** *L* **1** # r03-5

Anslow, Peter Ciena Corporation

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

In "Insert 1.4.454a before 1.4.454 (single-port device):", "before" should be "after".
Same issue in editing instruction for 1.4.492a on line 22
See also previous comment about definition numbering.

SuggestedRemedy

Change:
"Insert 1.4.454a before 1.4.454 (single-port device):" to:
"Insert 1.4.453a after 1.4.453 (single-port device):"
On line 22 change:
"Insert 1.4.492a to 1.4.492d before 1.4.492 "Type 2 PSE" as follows:" to:
"Insert 1.4.491a to 1.4.491d after 1.4.491 "Type 2 PSE" as follows:"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **1** *SC* **1.4.490** *P* **25** *L* **12** # r03-83

Stewart, Heath Analog Devices Inc.

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

First word in sentence needs caps.

SuggestedRemedy

Change "see" to "See"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change "see" to "See" on page 24, line 51 and page 25 lines 4, 9, 12, 16, and 20.

Cl **1** *SC* **1.4.490** *P* **25** *L* **16** # r03-84

Stewart, Heath Analog Devices Inc.

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

First word in sentence needs caps.

SuggestedRemedy

Change "see" to "See"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by 84

Cl **1** *SC* **1.4.492** *P* **25** *L* **23** # r03-95

Stover, David Analog Devices Inc.

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

"Insert 1.4.492a to 1.4.492d before 1.4.492..." Shouldn't these definitions come after 1.4.492?

SuggestedRemedy

Change "Insert... before" to "Insert... after"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by 5

Cl **14** *SC* **14.3.1.1** *P* **27** *L* **9** # r03-6

Anslow, Peter — Ciena Corporation

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

The editing instruction is in the wrong place and says "Change 14.3.1.1 as follows:" but only the first paragraph is shown.

SuggestedRemedy

Move the editing instruction to be after the heading for 14.3.1.1 and change it to: "Change the first paragraph of 14.3.1.1 as follows:"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.9.1.1.5** *P* **39** *L* **33** # r03-20

Yseboodt, Lennart — Philips Lighting

Comment Type **T** *Comment Status* **D** *Management*

OOS

"Type 3 and Type 4 PSEs do not use the values 'test' or 'otherFault'."

Actually, these PSEs don't use "fault", but do use 'otherFault'.

SuggestedRemedy

Change to:
"Type 3 and Type 4 PSEs do not use the values 'test' or 'fault'."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **30** *SC* **30.12.2.1.17b** *P* **47** *L* **18** # r03-81

Law, David — Hewlett Packard Enter

Comment Type **T** *Comment Status* **X** *Pres: Law1*

A PSE that supports DLL classification contains an instance of both the Local System Group (oLldpXdot3LocSystemsGroup) managed object class and the Remote System Group (oLldpXdot3RemSystemsGroup) managed object class. Similarly a PD that supports DLL classification contains an instance of both the Local System Group managed object class and the Remote System Group managed object. The information in the Local System Group managed object class is used to populate the fields in transmitted TLVs, the Remote System Group managed object class is populated from the received TLVs. This the case for both a PD and a PSE. See <http://www.ieee802.org/3/bt/public/jan17/802d3bt_law_01_0117.pdf> for more details.

Based on this every attribute in these two managed object classes needs to have a defined behaviour for both a PSE and a PD. At the moment some do, for example 30.12.2.1.17b aLldpXdot3LocPDRequestedPowerValueB includes the text 'For a PD, it is the power value that the PD has currently requested from the remote system for the Mode B pairset. For a PSE, it is the power value for the Alternative B pairset that the PSE mirrors back to the remote system.'.

But others do not, for example 30.12.2.1.18n aLldpXdot3LocAutoclassCompleted just states 'A read-only attribute that returns a bit string indicating whether the local PSE system has completed the Autoclass measurement.'. Taking this as an example Table 79-9 'IEEE 802.3 Organizationally Specific TLV/LLDP Local System Group managed object class cross references' states that the 'Autoclass completed' bit is mapped from the attribute aLldpXdot3LocAutoclassCompleted. Further, subclause 79.3.2.6f.2 'Autoclass completed' states that 'When the Power type is PD this field shall be set to 0.'. Based on this the behaviour of the aLldpXdot3LocAutoclassCompleted attribute should really state that 'For a PD this bit is set to zero.'.

Also there seems to be cases where the description in Clause 30 is not aligned with Clause 79. As an example subclause 30.12.2.1.18e aLldpXdot3LocPowerPairsExt states that '... for a PD the contents of this attribute are undefined.'. Table 79-9 states that the PSE power pair ext is mapped from the aLldpXdot3LocPowerPairsExt attribute yet subclause 79.3.2.6c.3 'PSE power pairs ext' states that 'A TLV generated by a PD shall set the field to 0.'.

SuggestedRemedy

Ensure that (a) Clause 30 Local System Group and Remote System Group managed object class attributes have defined behaviours for both a PD and a PSE instance and (b) Clause 30 Local System Group and Remote System Group managed object class attributes behaviours match the behaviours defined for the TPV fields they are mapped from or to.

Proposed Response *Response Status* **W**

TFTD

WFP

Cl **30** *SC* **30.12.2.1.18d** *P* **48** *L* **35** # r03-21

Yseboodt, Lennart — Philips Lighting

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

OOS

Management object "aLldpXdot3LocPDPoweringStatus" name does not match with corresponding LLDP field,
which is called 'PD Powered Status field'.

SuggestedRemedy

Change to "aLldpXdot3LocPDPoweringStatus" to "aLldpXdot3LocPDPoweredStatus" in the draft.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Do they need to match? The current text makes sense as the PSE is powering and the PD is powered…

TFTD

Cl **30** *SC* **30.12.2.1.18m** *P* **51** *L* **23** # r03-71

Law, David — Hewlett Packard Enter

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

Typo, missing semicolon at end of 'behaviour defined as' text.

Other instances as follows:

Subclause 30.12.2.1.18c; Page 48; Line 33;
Subclause 30.12.2.1.18d; Page 48; Line 45;
Subclause 30.12.2.1.18m; page 51; line 24;
Subclause 30.12.2.1.18n; page 51; line 34;
Subclause 30.12.2.1.18o; page 51; line 44;
Subclause 30.12.2.1.18p; page 52; line 3;
Subclause 30.12.3.1.18c; page 59; line 32;
Subclause 30.12.3.1.18d; page 59; line 45;
Subclause 30.12.3.1.18h; page 61; line 9;

SuggestedRemedy

Add a semicolon after the last full stop at the end of the 'behaviour defined as' text.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **33.4.2** *P* **70** *L* **27** # r03-7

Anslow, Peter — Ciena Corporation

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

"55.8.2.3" and "126.8.2.4" have been added to the text of this paragraph, but are not shown in underline font.

SuggestedRemedy

Show "55.8.2.3" and "126.8.2.4" in underline font.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **33.4.3** *P* **70** *L* **54** # r03-8

Anslow, Peter — Ciena Corporation

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

The editing instruction is "Change 33.4.3 as follows:". However, the content of 33.4.3 in the base standard below Equation (33-16) is missing, so it is unclear what should be done with it.

SuggestedRemedy

Bring Equation (33-17) and Figure 33-20 in to the draft to clarify whether they should be removed or not.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **33.4.3** *P* **71** *L* **8** # r03-9

Anslow, Peter — Ciena Corporation

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

There should be a non-breaking space (Ctrl space) between a number and its unit, so "20MHz" should be "20 MHz"

SuggestedRemedy

In Table 33-19a , Table 145-34, and 145.7.3.3 EL18, add a non-breaking space between the number and its unit (multiple instances in each case).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **33.4.9.1** *P* **73** *L* **24** # r03-10

Anslow, Peter — Ciena Corporation

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

The fourth row of the list starts with 3) in strikethrough font. This should be 4) in strikethrough font.

SuggestedRemedy

Change it to 4) in strikethrough font.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **33.4.9.1b.1** *P* **76** *L* **35** # r03-22

Yseboodt, Lennart — Philips Lighting

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

OOS

"Calculations that result in PSANEXT loss values greater than 67 dB shall revert to a requirement of 67 dB minimum."

We changed this in Clause 145 but forgot to update Clause 33.

SuggestedRemedy

Change to:
"When the computed PSANEXT value at a certain frequency exceeds 67 dB, the PSANEXT result at that frequency is for information only."

and remove the paragraph break in 145.4.9.4.1 for the equivalent sentence.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **33.4.9.1b.2** *P* **76** *L* **49** # r03-23

Yseboodt, Lennart — Philips Lighting

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

OOS

"Calculations that result in PSAFEXT loss values greater than 67 dB shall revert to a requirement of 67 dB minimum."

We changed this in Clause 145 but forgot to update Clause 33.

SuggestedRemedy

Change to:
"When the computed PSAFEXT value at a certain frequency exceeds 67 dB, the PSAFEXT result at that frequency is for information only."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **79** *SC* **79.3** *P* **85** *L* **19** # r03-11

Anslow, Peter — Ciena Corporation

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

IEEE Std 802.3br-2016 has been included in the revision of 802.3 that the 802.3bt draft will be an amendment of. The editing instruction should therefore not include mention of IEEE Std 802.3br-2016.
Same issue in the editing instructions for:
79.3.8 on page 96, line 12
79.5.12 on page 107, line 31

SuggestedRemedy

Delete "(as modified by IEEE Std 802.3br-2016)" here (page 85, line 19).
Delete "(as inserted by IEEE Std 802.3br-2016)" in the editing instructions for:
79.3.8 on page 96, line 12
79.5.12 on page 107, line 31

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **79** *SC* **79.3** *P* **85** *L* **38** # r03-12

Anslow, Peter — Ciena Corporation

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

In the bottom row of Table 79-1 there is a "7" in strikethrough font. However, the base standard has "8 to 255", so this should be "8" in strikethrough font.

SuggestedRemedy

Change "7" to "8"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **79** *SC* **79.3.2** *P* **85** *L* **48** # r03-13

Anslow, Peter — Ciena Corporation

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

At the bottom of the first paragraph of 79.3.2 is the text "...as defined in 33.5 and 145.5." However:
the base standard has "33.6" here rather than "33.5"
33.6 exists in the draft, so "33.6" should be a cross-reference
33.6 is unchanged, so it should not be underlined

SuggestedRemedy

Change "33.5" in forest green and underlined font to:
"33.6" as a black cross-reference with no underline

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **79** *SC* **79.3.2** *P* **86** *L* **14** # r03-14

Anslow, Peter — Ciena Corporation

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

"... the Power Interface (PI), as defined in 1.4.337." should be "... the Power Interface (PI), as defined in 1.4.406."

SuggestedRemedy

Change "1.4.337" to "1.4.406"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **79** *SC* **79.3.8** *P* **96** *L* **12** # r03-24

Yseboodt, Lennart — Philips Lighting

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

Editing instruction: "Insert 79.3.8 after 79.3.7 (as inserted by IEEE Std 802.3br-2016) as follows:"

must be updated per rebase to 802.3-2018

SuggestedRemedy

Change to: "Insert 79.3.8 after 79.3.7 as follows:"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **79** *SC* **79.3.8** *P* **96** *L* **16** # r03-25

Yseboodt, Lennart — Philips Lighting

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

"Clause 33 defines two optional power entities: a Powered Device (PD) and Power Sourcing Equipment (PSE)."

Ignores existence of Clause 145.

SuggestedRemedy

"Clause 33 and Clause 145 define two optional power entities: a Powered Device (PD) and Power Sourcing Equipment (PSE)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **79** *SC* **79.3.8.1** *P* **96** *L* **31** # r03-15

Anslow, Peter — Ciena Corporation

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

The table being inserted in 79.3.8.1 comes after Table 79-8 in 79.3.7.2 of the base standard, so it should be Table 79-8a.

SuggestedRemedy

Change the table number to be Table 79-8a

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **79** *SC* **79.3.8.1** *P* **97** *L* **23** # r03-26

Yseboodt, Lennart — Philips Lighting

Comment Type **T** *Comment Status* **D** *LLDP*

OOS

In column "Bit" number 153:152, the labeled bit numbers 121 and 120 are wrong in the corresponding "value/meaning" column.

SuggestedRemedy

Change to:
Bit numbers 153 and 152

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **79** *SC* **79.3.8.2** *P* **98** *L* **51** # r03-16

Anslow, Peter — Ciena Corporation

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

Having deleted Equation (79-1) in 79.3.2.5 and Equation (79-2) in 79.3.2.6, the new equation in 79.3.8.2 should be Equation (79-1)

SuggestedRemedy

Change the equation number from "(79-1a)" to "(79-1)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **79** *SC* **79.4.2** *P* **99** *L* **15** # r03-17

Anslow, Peter — Ciena Corporation

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

These two tables have been re-numbered in the revision as Table 79-10 and Table 79-11

SuggestedRemedy

Change the table numbers from 79-9 and 79-10 to 79-10 and 79-11 and modify the editing instruction accordingly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **79** *SC* **79.4.2** *P* **99** *L* **30** # r03-72

Law, David — Hewlett Packard Enter

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

Typo, 'PSE power pair ext' should read 'PSE power pairs ext' based on subclause 79.3.2.6c.3.

SuggestedRemedy

Change '... pair ext' to read '... pairs ext'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **79** *SC* **79.5.12** *P* **107** *L* **31** # r03-27

Yseboodt, Lennart — Philips Lighting

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

Editing instruction: "Insert subclause 79.5.12 after 79.5.11 as inserted by IEEE Std 802.3br-2016 as follows:"

To be updated per the rebase on 802.3-2018

SuggestedRemedy

Change to: "Insert subclause 79.5.12 after 79.5.11 as follows:"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.1.2** *P* **112** *L* **51** # r03-18

Anslow, Peter — Ciena Corporation

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

The two definition numbers on lines 52 and 54 have changed in the revision.

SuggestedRemedy

On line 52 change "1.4.337" to "1.4.406"
On line 54 change "1.4.269" to "1.4.324"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.1.3** *P* **113** *L* **47** # r03-28

Yseboodt, Lennart — Philips Lighting

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

OOS

"For 2-pair systems that provide Class 4 power or less, two twisted pairs are required to source I Cable --one carrying (+ I Cable) and one carrying (- I Cable), from the perspective of the PI."

Implies that there are 2-pair systems that provide more than Class 4.

The proposed change links nicely to the next sentence in the paragraph which reads:

"All four twisted pairs, connected from PSE PI to PD PI are required in order for the PSE to source greater than Class 4 power at the PSE PI"

SuggestedRemedy

Change to:
"In a 2-pair system two twisted pairs are required to source I Cable --one carrying (+ I Cable) and one carrying (- I Cable), from the perspective of the PI.
Such systems are restricted to Class 4 power."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Note that the 4-pair equivalent sentence doesn't mention 4-pair systems, thus this sentence doesn't need to and it only confusing things…

Change to:
"Two twisted pairs are required to source I Cable --one carrying (+ I Cable) and one carrying (- I Cable), from the perspective of the PI. Such systems are restricted to Class 4 power."

Cl **145** *SC* **145.1.4** *P* **115** *L* **14** # r03-69

Brillhart, Theodore — Fluke Corporation

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

While the ISO/IEC TS 29125 Technical Specification 'Information technology -- Telecommunications cabling requirements for remote powering of terminal equipment' provides guidance for remote powering on new cabling installations and renovations ISO/IEC JTC1 SC25 WG3 is working on a revision of the ISO/IEC 14763-2 standard 'Information technology -- Implementation and operation of customer premises cabling -- Part 2: Planning and installation' which is currently in the committee draft balloting stage.

This revision to the standard will add the requirements and recommendations for the specification, planning, installation and administration of cabling intended to support currents per conductor of up to 500 mA. It mandates those requirements for all installations of cabling into new buildings and refurbishment of existing infrastructure.

Subclause 145.1.4 Cabling requirements states 'Under worst-case conditions, Type 3 operation requires a 10 degree C reduction in the maximum ambient temperature when all cable pairs are energized at ICable (see Table 145-1), or a 5 degree C reduction in the maximum ambient temperature when half of the cable pairs are energized at ICable.'

This statement is not correct since the 10 degree C reduction covers a 100 cables bundle in air (ventilated) and therefore does not correspond to worse case conditions. Instead a reference to ISO/IEC 14763-2 should be made as this provides guidance on installations in all configurations.

SuggestedRemedy

Change the second paragraph of 145.1.4 to read 'Requirements for the planning of all types of PSEs are provided in ISO/IEC CD 14763-2 supported by the information in ISO/IEC TS 29125 and TIA TSB-184-A, as well as applicable local codes and regulations, e.g., ANSI/NFPA 70 - National Electric Code(R) (NEC(R)) for more information.'

Proposed Response *Response Status* **W**

TFTD

Cl **145** *SC* **145.1.4** *P* **115** *L* **19** # r03-99

Diminico, Christopher

Comment Type **G** *Comment Status* **X** *Pres: Diminico1*

The cautionary note on the use of cables with conductors smaller than 26 AWG should be replaced with reference to TIA-TSB-184-A Annex E. which is to provide installation guidelines to support the delivery of power over installations with 28 AWG cord cable.

SuggestedRemedy

Replace cautionary note with reference to TIA-TSB-184-A Annex E in development under TR42.7 which is to provide installation guidelines to support the delivery of power over installations with 28 AWG cord cable.

Presentation to be provided.

Proposed Response *Response Status* **W**

TFTD

WFP

Cl **145** *SC* **145.2.1** *P* **116** *L* **28** # r03-29

Yseboodt, Lennart Philips Lighting

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

OOS

"PSE Type is a constant."

What do we really want here ? 'constant' may mean for the life of the product.
Don't we really mean that the Type does not change outside of IDLE ?

SuggestedRemedy

Change to:
"The PSE Type can only change when the PSE state diagram (Figure 145-13) is in the IDLE state."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.2.4** *P* **125** *L* **5** # r03-30

Yseboodt, Lennart Philips Lighting

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

"The PSE shall meet all specifications related to current on the negative pair or pairs unless otherwise noted."

We need to review all references to current, specifically to 'pairset current'.

SuggestedRemedy

Adopt yseboodt_01_0318_current.pdf

Proposed Response *Response Status* **W**

TFTD

WFP

Cl **145** *SC* **145.2.5.2** *P* **126** *L* **8** # r03-31

Yseboodt, Lennart Philips Lighting

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

OOS

"Table 145-5--State diagram operator precedence, highest precedence at the top"

This is careless text, the typical construction would be "State diagram operators in order of precedence (highest to lowest)"

SuggestedRemedy

Change to:
"Table 145-5--State diagram operators in order of precedence (highest to lowest)"

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.2.5.4** *P* **135** *L* **34** # r03-32

Yseboodt, Lennart — Philips Lighting

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

OOS

"A variable that is used to cause the PSE to re-evaluate the value of pse_ss_mode if it is in the POWER ON state."

- missing underscore
- 'state' not needed

SuggestedRemedy

Change to:
"A variable that is used to cause the PSE to re-evaluate the value of pse_ss_mode when it is in POWER_ON."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.2.5.4** *P* **137** *L* **3** # r03-33

Yseboodt, Lennart — Philips Lighting

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

OOS

"... following transition into the POWER_ON state;"

Remove state.

SuggestedRemedy

Change to:
"... following transition into POWER_ON;"
Also change on line 5.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.2.5.5** *P* **137** *L* **45** # r03-77

Law, David — Hewlett Packard Enter

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

Other timers include a reference to the relevant symbol in the referenced table, suggest that a reference to the relevant symbol in Table 145-10 be provided for the tdet2det_timer timer. Also suggest the reference should be formatted as other similar references.

SuggestedRemedy

Change ' on the other. See Table 145-10.' to read ' on the other; see Tdet2det in Table 145-10.'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.2.5.6** *P* **139** *L* **32** # r03-78

Law, David — Hewlett Packard Enter

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

In the definition of the variables returned by the do_class_probe_pri function, for the pd_req_pwr_pri variable it is stated 'See pd_req_pwr_pri in 145.2.5.4.'. The pd_req_pwr_pri isn't defined in subclause 145.2.5.4, instead it's defined in the do_classification_pri function below. A similar issue exists for the pd_req_pwr_sec returned by the do_class_probe_sec function.

SuggestedRemedy

Change 'pd_req_pwr_pri: See pd_req_pwr_pri in 145.2.5.4.' to read 'pd_req_pwr_pri: See do_classification_pri function.'.
Change 'pd_req_pwr_sec: See pd_req_pwr_sec in 145.2.5.4.' to read 'pd_req_pwr_sec: See do_classification_sec function.'.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

pd_req_pwr is defined in 145.2.5.4 on page 132, line 23. All of the commented instances refer back to the original defintion so that there are not multiple definitons of the same variable.

Cl **145** *SC* **145.2.5.6** *P* **140** *L* **37** # r03-34

Yseboodt, Lennart Philips Lighting

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

"pd_class_sig_pri: The PD class signature seen during the most recent class event; see Table 145-11 and 145.2.8."

This is about the class signature and should point to Table 145-13 in stead.

SuggestedRemedy

Change link from Table 145-11 to 145-13 and make the same change for

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.2.5.6** *P* **142** *L* **44** # r03-104

Darshan, Yair

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

pse_allocated_pwr line need to be aligned to the other variables and need to be with one line space from the next line.

SuggestedRemedy

1. Move pse_allocated_pwr line to the left to align with do_update_pse_allocated_pwr.
2. keep one line space between pse_allocated_pwr to do_update_pse_allocated_pwr_pri

Proposed Response *Response Status* **W**

PROPOSED REJECT.

pse_allocated_pwr is a variable returned by the function do_update_pse_allocated_pwr and thus needs to be indented as it currently is. The current formatting is correct.

Cl **145** *SC* **145.2.5.6** *P* **142** *L* **49** # r03-105

Darshan, Yair

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

pse_allocated_pwr_pri line need to be aligned to the other variables and need to be with one line space from the next line.

SuggestedRemedy

1. Move pse_allocated_pwr_pri line to the left to align with do_update_pse_allocated_pwr_pri.
2. keep one line space between pse_allocated_pwr_pri to do_update_pse_allocated_pwr_sec"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

pse_allocated_pwr is a variable returned by the function do_update_pse_allocated_pwr_pri and thus needs to be indented as it currently is. The current formatting is correct.

Cl **145** *SC* **145.2.5.6** *P* **142** *L* **54** # r03-106

Darshan, Yair

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

pse_allocated_pwr_sec line need to be aligned to the other variables

SuggestedRemedy

Move pse_allocated_pwr_sec line to the left to align with do_update_pse_allocated_pwr_pri.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

pse_allocated_pwr is a variable returned by the function do_update_pse_allocated_pwr_sec and thus needs to be indented as it currently is. The current formatting is correct.

Cl **145** *SC* **145.2.5.7** *P* **149** *L* **17** # r03-100

Darshan, Yair

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

There is PSE state machine issue regarding the location "det_start_pri <== TRUE" from INIT_PRI to START_CXN_CHK_DETECT that need to be resolved. See darshan_01_0318.pdf for comment and remedy.

SuggestedRemedy

Adopt darshan_01_0318.pdf

Proposed Response *Response Status* **W**

TFTD

WFP

Cl **145** *SC* **145.2.6.2** *P* **159** *L* **33** # r03-35

Yseboodt, Lennart Philips Lighting

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

OOS

Equation 145-1 has a smaller font than other equations.

SuggestedRemedy

Change to Framemaker 'medium' size equation to align with rest of doc.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.2.7** *P* **161** *L* **7** # r03-36

Yseboodt, Lennart Philips Lighting

Comment Type **TR** *Comment Status* **D** *Connection Check*

OOS

Connection check PSE PI voltage requirements differ from those of detection.

Detection:
1. Voc applies for an open circuit
2. Isc applies for a short circuit
3. Vvalid applies when a valid detection signature is connected
4. Anything outside of these conditions is not specified, so falls back to Voc and Isc

Connection check repeats requirements 1 and 2, but omits 3.
Why would we permit the voltage to rise above Vvalid max when a valid detection signature is present ?
The whole point of detection was to prevent just that from happening.

Note that since CC and detection cannot be told apart at the PI, these requirement really must be the same in order to be testable.

SuggestedRemedy

Change sentence p161, line 17 from:
"During connection check the PSE shall meet the specifications for open circuit voltage, V oc , and short circuit current, I sc , in Table 145-7."
to read:
"During connection check the PSE shall meet the specifications for open circuit voltage, Voc, short circuit current, Isc, and valid test voltage Vvalid, defined in Table 145-7."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change
from:
During connection check the PSE shall meet the specifications for open circuit voltage, Voc, and short circuit current, Isc, in Table 145-7. In addition, only tests that result in a voltage at the PSE PI that is below Vvalid max as defined in Table 145-7 shall be used to determine whether a single-signature PD or dual-signature PD is attached to the two pairsets.

To:
During connection check the PSE shall meet the specifications for open circuit voltage, Voc, and short circuit current, Isc, in Table 145-7. The connection check voltage at the PSE PI shall be within the Vvalid voltage range, as defined in Table 145-7, with a valid PD connection check signature connected, as defined in (PD signature configuration).

Cl **145** *SC* **145.2.7** *P* **161** *L* **17** # r03-93

Stover, David — Analog Devices Inc.

Comment Type **TR** *Comment Status* **D** *Connection Check*

PSE connection check criteria specifies vvalid as voltage range for determining single/dual signature but does not prohibit PSE from using voltage greater than vvalid when a valid PD is connected. This behavior is inconsistent with detection requirements, so let's borrow the same text from PSE detection and apply to PSE connection check.

Also by prohibiting PSE from exceeding vvalid when connected to a valid PD, we do not need to specify PSE behavior above vvalid (voltage below Voff for at least TReset).

SuggestedRemedy

Change
from:
During connection check the PSE shall meet the specifications for open circuit voltage, Voc, and short circuit current, Isc, in Table 145-7. In addition, only tests that result in a voltage at the PSE PI that is below Vvalid max as defined in Table 145-7 shall be used to determine whether a single-signature PD or dual-signature PD is attached to the two pairsets.

to:
During connection check the PSE shall meet the specifications for open circuit voltage, Voc, and short circuit current, Isc, in Table 145-7. The connection check voltage at the PSE PI shall be within the Vvalid voltage range, as defined in Table 145-7, with a valid PD connection check signature connected, as defined in (PD signature configuration).

Delete "If the voltage on either pairset rises above Vvalid max, as defined in Table 145-7, during connection check,
the PSE shall reset the PD by bringing the voltage at the PI below Voff max, as defined in Table 145-16, for
at least TReset, as defined in Table 145-14, before performing classification."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

We can't delete the reset text as we still have the possibility of a PD getting plugged in during connection check. Not sure if CC will work as the PD may be in mark as the PI will start at Voc and then come down, but we still need to account for it.

Change
from:
During connection check the PSE shall meet the specifications for open circuit voltage, Voc, and short circuit current, Isc, in Table 145-7. In addition, only tests that result in a voltage at the PSE PI that is below Vvalid max as defined in Table 145-7 shall be used to determine whether a single-signature PD or dual-signature PD is attached to the two pairsets.

To:
During connection check the PSE shall meet the specifications for open circuit voltage, Voc, and short circuit current, Isc, in Table 145-7. The connection check voltage at the PSE PI shall be within the Vvalid voltage range, as defined in Table 145-7, with a valid PD connection check signature connected, as defined in (PD signature configuration).

Cl **145** *SC* **145.2.8** *P* **162** *L* **14** # r03-37

Yseboodt, Lennart — Philips Lighting

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

We added a note to explain the absence of Class 0, but it is written the past tense, making it read akward.

"NOTE--For Type 3 PDs, a requested Class 0 is not defined. Type 1 PDs that did not implement Physical Layer classification requested Class 0, with a power level equivalent to Class 3. PDs that request Class 0 are assigned Class 3 by Type 3 and Type 4 PSEs."

SuggestedRemedy

Change to:
"NOTE - Requested Class 0 is not defined for Type 3 PDs. A Type 1 PD that does not implement Physical Layer classification requests Class 0, with a power level equivalent to Class 3. Such PDs are assigned to Class 3 by Type 3 and Type 4 PSEs."

Also change on page 203, line 5 in 145.3.6.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.2.8** *P* **162** *L* **14** # r03-108

Darshan, Yair

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

The text "Type 1 PDs that did not implement Physical Layer classification requested Class 0, with a power level equivalent to Class 3. PDs that request Class 0 are assigned Class 3 by Type 3 and Type 4 PSEs."
Missing "to".

SuggestedRemedy

Change to "Type 1 PDs that did not implement Physical Layer classification requested Class 0, with a power level equivalent to Class 3. PDs that request Class 0 are assigned to Class 3 by Type 3 and Type 4 PSEs."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by 37

Cl **145** *SC* **145.2.8** *P* **162** *L* **32** # r03-38

Yseboodt, Lennart — Philips Lighting

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

Equation 145-2 sets the minimum output power for a PSE having assigned a particular Class.
The equation allows the PSE to optimize power allocation for both the link section resistance and the PSE output voltage.

This equation however does not take into account the case of assigned Class 1-4 when operating in 4-pair mode.
Per the equation the PSE is allowed to assume that the PD will draw a 4-pair current, however, because there is no balance requirement on PDs of this Class,
it is possible for a PD to draw all the current over 2-pairs only. The effective resistance in that case is RChan-2P.

SuggestedRemedy

Make the PClass equation split out into two cases:

[current equation with RChan replaced by RChan-2P] ' for assigned Class 1 through 4'
[current equation unmodified] ' for assigned Class 5 through 8'

Change the text in the paragraph above:
"PSE implementations may use V PSE = V Port_PSE-2P min and R Chan = R Ch when powering using 2-pair, or R Chan = R Ch /2 when powering using 4-pair to arrive at over-margined values as shown in Table 145-11."
to read:
"PSE implementations may use V PSE = V Port_PSE-2P min and R Chan = R Ch when the assigned Class is 1 through 4, or R Chan = R Ch /2 when the assigned Class is 5 through 8 to arrive at over-margined values as shown in Table 145-11."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.2.8** *P* **162** *L* **48** # r03-39

Yseboodt, Lennart — Philips Lighting

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

The PClass-2P equation (145-3) uses the wrong term to refer to the pairset resistance, RChan in stead of RChan-2P.

SuggestedRemedy

Replace RChan by RChan-2P (2 occurances) in Equation (145-3).

Also replace Rchan by RChan-2P in the variable description below the equation.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.2.8** *P* **163** *L* **11** # r03-40

Yseboodt, Lennart — Philips Lighting

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

OOS

There is no guidance on what to do in case when a fault occurs that causes the PSE to flip to two-pair (*_SEMI_PWRON state).
Would suggest to revert back to PClass in this case.

This provides guidance both for a case where power is managed through DLL or through Autoclass.
This is only required for Class 5-8.

SuggestedRemedy

Insert new sentence on line 12:
"When the PSE assigned Class 5 through 8 prior to a fault and then transitions to PRIMARY_SEMI_PWRON or SECONDARY_SEMI_PWRON, it shall revert the allocation of power to PClass per the assigned Class."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This is a fault mode and the worst that happens is that the PD gets shut down. There is no justification for inserting a new "shall" at this point in the process. Furthermore, any Class 5-8 PD that gets powered from SEMI_PWRON is almost guarenteed to get shut down immediately.

Cl **145** *SC* **145.2.8** *P* **163** *L* **14** # r03-96

Stover, David — Analog Devices Inc.

Comment Type **T** *Comment Status* **D** *Autoclass*

Pac_extra seems to address the case where PSE asynchronously transitions from 4-pair to 2-pair power, ensuring PD still gets full power allocation. However, we say "A PSE that measured PAutoclass while providing power over 4 pairs, shall increase ... during any time it provides power over 2 pairs thereafter." How does this work in the case where a new LLDP-based PD Autoclass measurement is performed AFTER the transition to 2-pair power? Such measurements would already account for RCh/2.

SuggestedRemedy

TFTD clarifying in this conformance statement that Pac_extra needn't be added if Autoclass measurement is performed after transition to 2 pair power.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

It says in that very sentence "A PSE that measured Pautoclass while providnig power over 4 pairs….". Thus, this does not apply if the autoclass measurement was done over 2 pairs.

Cl **145** *SC* **145.2.8.1** *P* **166** *L* **34** # r03-85

Stewart, Heath — Analog Devices Inc.

Comment Type **E** *Comment Status* **D** *PSE Class*

Dual signature PDs need careful clarification as to which pairset is being referenced.

SuggestedRemedy

Change
PSEs connected to a dual-signature PD shall issue, for a given pairset, no more class events than the Class they are able to support and no more than:
- three class events when the PD requests Class 1 through 4
- four class events when the PD requests Class 5

To
PSEs connected to a dual-signature PD shall issue, for a given pairset, no more class events than the Class
they are able to support and no more than:
- three class events when the PD requests Class 1 through 4 on the given pairset
- four class events when the PD requests Class 5 on the given pairset

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.2.9** *P* **168** *L* **50** # r03-41

Yseboodt, Lennart — Philips Lighting

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

OOS (it has a change bar, but that is because it was moved)

The 4PID requirements subitem b) does not take 3-pair into account.
"The PSE detects a valid detection signature on the unpowered pairset when power is provided over a single pairset"

This would require a true 2-pair mode to exist in order to use this method.
We'll change this to say '2-pair mode' and use yseboodt_01_0318_current.pdf to make clear that includes 3-pair mode for PSEs.

SuggestedRemedy

Change to:
"The PSE detects a valid detection signature on the unpowered pairset when power is provided in 2-pair mode."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.2.8.2** *P* **169** *L* **1** # r03-86

Stewart, Heath — Analog Devices Inc.

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

Table has moved out of the section to which it relates.

SuggestedRemedy

Move 145.2.8.3 so it is below Table 145-15.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

There is no 145.2.8.3.

Move 145.2.9 so it is below Table 145-15.

Cl **145** *SC* **145.2.10** *P* **170** *L* **10** # r03-117

Darshan, Yair

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

This comment is marked UNB_REQ.
1. In our spec, we concluded that Icon-2P_unb need to be split to two parameters:
a) Iunbalance-2P which is the max pair current due to unbalance when connected to the test verification model.
b) Icon-2P_unb which is the minimum pair current that the PSE will be able to support under unbalance condition.
c) It is obvious that Icon-2P_unb need to be higher than Iunbalance-2P.
d) In D3.2 we set the numbers of Iunbalance-2P and Icon-2P_unb per the following principles:
We took the simulation results (without the test verification +/-1% accuracy effect) and add to it 5mA and set it as Icon-2P_unb (the actual contribution of the +/-1% is 7mA to 11mA pending the class and not 5%).
And then we set Iunbalance-2P as Icon-2P_unb - 10mA.
3. When I test by calculations if we meet the Iunbalance-2P spec by connecting the PSE to the test verification model, I saw that we fail in Class 5,6 and 7, Class 8 passes but with very small margin. The reason is that in D3.2 we did the procedure to define Iunbalance-2P wrongly.
The reason for the failure is:
Eq-1: Icon-2P_unb=sim_results + 5mA
Eq-2: Iunbalance-2P = Icon-2P_unb -10mA = sim_results + 5mA -10mA =sim_results - 5mA so it clear why we will fail the test when we connect the PSE to the test verification model that was based on the worst case of the sim/calculation results. The sim/calculation results are the minimum value for Iunbalance-2P! (and to add to it the test verification model accuracy effect on Iunbalance-2P and to add the margin to handle Rpse_min, Rpd_min range which is couple of few mA as shown in my previous work on the subject).

SuggestedRemedy

Make the following changes for Icon-2P_unb:
Change Icon-2P_unb for Class 5,6,7,8 from:
0.555, 0.687, 0.789, 0.943
To: 0.570, 0.703, 0.818, 0.950

[As explained, the new values of Icon-2P_unb, when we decrease 10mA from it to determine Iunbalance-2P, will give us the worst case of Iunbalance-2P under +/1% accuracy and Rpse_min, Rpd_min range]
See darshan_01_0318.pdf for details.

Proposed Response *Response Status* **W**

TFTD

WFP

Cl **145** *SC* **145.2.10** *P* **171** *L* **12** # r03-118

Darshan, Yair

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

If comment UNB_REQ will be accepted, ILIM-2P for class 5, 6 and 7 need to slightly modified to sync with Ipeak_2P_unb that has to be higher due to higher Iunbalance-2P.

SuggestedRemedy

Change ILIM-2P for class 5, 6 and 7 from:
0.578, 0716, 0.823
To:
0.59, 0.729, 0.842

Proposed Response *Response Status* **W**

TFTD

WFP

Cl **145** *SC* **145.2.10.1** *P* **173** *L* **14** # r03-115

Darshan, Yair

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

It is not clear in which cases Trise spec applies. Originally this was specified for EMI reasons but it is not a periodic signal and its effect on EMI is negligible. It is more useful for limiting the transients for the PD logic circuitry which is a good thing. Normally we have the transient at the first time when the PSE applies power and at around 30V the PD isolating switch is turned on which may result with fast drop of the voltage and then nice voltage ramping at Trise much greater than 15us due to larger capacitance at this point of time. So Trise could be measured and apply for the following cases:
a. from the application of Vport_pse i.e. the first rise of the PSE voltage OR
b. from Von_pd to Vport_pse-2P, OR
c. Any transient during the power up phase from t0 to t0+1msec.
d. Any transient during the powerup phase.
As we can see from the above possibilities, it is not clear where is the relevant transient location and its exact definition in which Trise applies.

SuggestedRemedy

Change from: " "TRise, as defined in Table 145-16, is referenced from 10% to 90% of the voltage difference between the positive and the negative conductors of a pairset in a power on state from the beginning of a power up state.""
To: "TRise, as defined in Table 145-16, is referenced from 10% to 90% of the voltage difference between the positive and the negative conductors of a pairset in a power up state from the application of PSE voltage to the beginning of a power up state."

Proposed Response *Response Status* **W**

TFTD

Yair, I don't understand your proposed text.

Cl **145** *SC* **145.2.10.5** *P* **173** *L* **41** # r03-42

Yseboodt, Lennart — Philips Lighting

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

OOS

"145.2.10.5 Continuous output current capability in the POWER_ON state"

This subclause also applies to dual-signature but the title does not reflect this.

SuggestedRemedy

Change to:
"145.2.10.5 Continuous output current capability in the power on states"

also, change the title of 145.2.10.1 to:
"Output voltage in the power on states".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **142** *SC* **142.2.10.5** *P* **174** *L* **6** # r03-82

Abramson, David — Texas Instruments Inc

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

The definitions for current need to be updated.

SuggestedRemedy

Edit equation 145-7 as follows:

1. Replace: "is the output current sourced on the Primary Alternative" with "is the current on the negative pair of the Primary Alternative"

2. Make same change for Secondary Alternative

Proposed Response *Response Status* **W**

TFTD

WFP

Cl **145** *SC* **145.2.10.5.1** *P* **176** *L* **15** # r03-102

Darshan, Yair

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

Equation 145-13 (Rpse_min/max) is good also for Class 8 extended power since PD is the main factor that affect the fact that at extended power Iunbalance is violated if tighter Rpd_max/Rpd_min ratio will not be used. This need to be clarified in the text. Verified in simulation. There are other comments that adresses the effect of extended power on Equation 145-26 (which affect meeting Iunbalance) and its test verification model for the PD.

SuggestedRemedy

Add the following text:
"Equation 145-13 is valid for PClass_PD including the conditions specified in 145.3.8.2.1.

Proposed Response *Response Status* **W**

TFTD

Cl **145** *SC* **145.2.10.5.1** *P* **177** *L* **13** # r03-103

Darshan, Yair

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

Rload2_max and Rload2_min in the test verification model (Figure 145-21 and Table 145-18) are correct only for the requested PClass_PD in Table 145-26 (e.g. 71.3W for Class 8) and not for the extended power case as specified in in 145.3.8.2.1. In order to meet Iunbalance at Pclass_PD higher than 71.3W, tighter ratio of Rload2_max/ Rload2_min are required (which is equivalent to Rpd_max/Rpd_min).

SuggestedRemedy

Add the following text after line 13 in page 177:
"Rload2_max and Rload2_min in the test verification model (Figure 145-21 and Table 145-18) are correct only for the requested PClass_PD in Table 145-26 and not for PClass_PD as specified in 145.3.8.2.1. In order to meet Iunbalance per the conditions of 145.3.8.2.1, tighter ratio of Rload2_max/ Rload2_min are required (which is equivalent to Rpd_max/Rpd_min in Equation 145-26. "

Proposed Response *Response Status* **W**

TFTD

Cl **145** *SC* **145.2.10.8** *P* **181** *L* **17** # r03-65

Lukacs, Miklos — Silicon Laboratories

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

Ilps is referring to to a current on a pairset, but this is not shown in the name of this parameter.

SuggestedRemedy

Rename Ilps to Ilps-2p

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Restated for clarity:

Change ILPS to ILPS-2P in equation 145-18.

Cl **145** *SC* **145.2.10.8** *P* **181** *L* **27** # r03-43

Yseboodt, Lennart — Philips Lighting

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

"The PSE shall limit a pairset current to I LIM-2P for a duration of up to T LIM ."

This is backwards, the PSE is required to limit the current to ILIM-2P for at least a duration of TLIM (which is a minimum).

SuggestedRemedy

Replace by:
"The PSE shall limit the pairset current to I LIM-2P for a duration of at least T LIM ."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.2.10.8** *P* **181** *L* **51** # r03-87

Stewart, Heath — Analog Devices Inc.

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

Different Tlim values exist for Type 3 and Type 4 PSEs. These PSEs may be otherwise indistinguishable at the PI.
We are really talking about the ability of the PSE to transition from the zero to tlim "shall provide" to the tlim to tcut "shall provide". The goal is to ensure that a PSE w/ only 50V gives the full 10ms.
It is reasonable to allow a Type 4 PSE to make use of the 6ms Tlim, regardless of PD assigned class, by monitoring Tlim, VPort_PSE-2P and VTran-2P for compliance as a group.

SuggestedRemedy

Add
Note - Type 3 and Type 4 PSEs may not be differentiated at the PI. A Type 4 PSE, regardless of assigned Class, may continue to use the Type 4 Tlim, min value as long as VPort_PSE-2P and VTran-2P continue to meet the Type 4 PSE requirements.

Proposed Response *Response Status* **W**

TFTD

Heath, I am not sure we need this text. If the PSE continues to meet the voltage requirements for Type 4, and the PI is not distinguishable from Type 4 in any other way (thus it is type 4), then why do we need this clarification?

Cl **145** *SC* **145.3.3.3.2** *P* **187** *L* **44** # r03-44

Yseboodt, Lennart — Philips Lighting

Comment Type **T** *Comment Status* **D** *NoPower*

"nopower: A variable that indicates the PD has been in NOPOWER, which indicates V PD was below V Off_PD min while being powered, since the last time V PD was below V Reset for at least T Reset ."

No longer true per the changes to the state machine.

SuggestedRemedy

Change to:
"nopower: A variable that indicates the PD has been in POWEROFF, which indicates V PD was below V Off_PD while being powered, since the last time V PD was below V Reset for at least T Reset ."

Also fix for dual-signature.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.3.3.3.5** *P* **193** *L* **29** # r03-94

Stover, David — Analog Devices Inc.

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

PD is a voltage-controlled state machine with the exception of INRUSH state, which relies solely on tinrushpdmax_timer. I understand the accommodation for reasonable inrush load steps and consequent voltage transients, but VPD < Vmark_th should enter NOPOWER in all cases.

SuggestedRemedy

Add a transition arc from INRUSH to NOPOWER with the condition "VPD < Vmark_th".
Add "nopower <= TRUE" to NOPOWER state.

Proposed Response *Response Status* **W**

TFTD

Cl **145** *SC* **145.3.3.4.2** *P* **194** *L* **47** # r03-19

Jones, Chad — Cisco Systems, Inc.

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

"A variable indicating that on Mode X, the PD is enabled and should request power from the PSE by applying a PD detection signature to the PI". sentence construct is awkward and doesn't match the form used by the rest of the variables WRT 'on Mode X' where it occurs after 'the PD'.

SuggestedRemedy

change: "A variable indicating that on Mode X, the PD is enabled and should request power from the PSE by applying a PD detection signature to the PI..."

to: "A variable indicating that the PD is enabled on Mode X and should request power from the PSE by applying a PD detection signature to the PI..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.3.3.4.3** *P* **197** *L* **18** # r03-110

Darshan, Yair

Comment Type **T** *Comment Status* **D** *PD SD*

The tpowerdly_timer_mode(X) text is not similar to the tpowerdly_timer.
In the single-signature PD we have: "tpowerdly_timer A timer used to prevent the PD from drawing more than IInrush_PD and IInrush_PD-2P during the PSE's inrush period; See Tdelay in Table 145-29."
The part " during the PSE's inrush period" doesn't look accurate and sync with what the PD state machine is actually doing. This timer is used to prevent the PD from drawing more than IInrush_PD and IInrush_PD-2P from TInrush_PD to Tdelay which is different than how it is specified here. See below in the timer for dual-signature PD which is better description of the timer role.

In the dual-signature PD we have: "tpowerdly_timer_mode(X) 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."
Which is a correct description of the timer role.

SuggestedRemedy

Change from:
" tpowerdly_timer A timer used to prevent the PD from drawing more than IInrush_PD and IInrush_PD-2P during the PSE's inrush period; See Tdelay in Table 145-29.
To:
"tpowerdly_timer A timer used to prevent the PD from drawing more than IInrush_PD and IInrush_PD-2P from TInrush_PD to Tdelay. See Tdelay in Table 145-29. "

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

On pag 190, line 48
Change from:
" tpowerdly_timer A timer used to prevent the PD from drawing more than Iinrush_PD and Iinrush_PD-2P during the PSE's inrush period; See Tdelay in Table 145-29.
To:
"tpowerdly_timer A timer used to prevent the PD from drawing more than Iinrush_PD and Iinrush_PD-2P from Tinrush_PD to Tdelay. See Tdelay in Table 145-29. "

Cl **145** *SC* **145.3.3.4.4** *P* **197** *L* **28** # r03-67

Lukacs, Miklos — Silicon Laboratories

Comment Type **E** *Comment Status* **D** *PD SD*

The construction of the text in this paragraph is confusing.
"A variable that indicates to the PD the Type of PSE to which it is connected.
This variable is used to indicate which MPS timing requirements (see 145.3.9) the PD should use."

SuggestedRemedy

Change the text to
"A variable that indicates the Type of PSE to which the PD is connected to, and used to determine which MPS timing requirements (see 145.3.9) the PD
should use."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This text is Out of Scope. No technical justification has been provided for the change and the suggested text does not improve clarity.

Cl **145** *SC* **145.3.3.4.4** *P* **197** *L* **39** # r03-76

Law, David — Hewlett Packard Enter

Comment Type **T** *Comment Status* **D** *PD SD*

It is stated that the function do_initialize_mode(X) returns pd_dll_capable_mode(X) as defined in 145.3.3.4.2 however there is no such variable defined in 145.3.3.4.2, only pd_dll_capable which makes sense as being DLL capable should not vary on a per mode basis, a PD is either PD capable or not. The state diagram also only used pd_dll_capable.

SuggestedRemedy

Change pd_dll_capable_mode(X) to read pd_dll_capable.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.3.3.4.5** *P* **199** *L* **14** # r03-75

Law, David — Hewlett Packard Enter

Comment Type **T** *Comment Status* **D** *PD SD*

Extra '(' in (nopower_mode(X) + tpowerdly_timer_done_mode(X)

SuggestedRemedy

Change '(nopower_mode(X)' to read 'nopower_mode(X)'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.3.3.4.5** *P* **199** *L* **22** # r03-107

Darshan, Yair

Comment Type **T** *Comment Status* **D** *NoPower*

The changes implemented for the PD state machine for POWER_OFF and NOPOWER was not implemented in the dual-sig state machine.

SuggestedRemedy

1. Remove nopower_mode(X) from NOPOWER and move it to POWEROFF.
2. The exit from POWEROFF to NOPOWER, change it from:
VPD_mode(X)<Voff_PD_min
To: VPD_mode(X)<Vmark_th

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

1. Remove nopower_mode(X) from NOPOWER and move it to POWEROFF.
2. The exit from POWEROFF to NOPOWER, change it from:
VPD_mode(X)<Voff_PD_min
To: VPD_mode(X)<Vmark_th
3. Change nopower variable to match single-signature defintion.

TFTD to hold open for any other changes to nopower in the SS SD.

Cl **145** *SC* **145.3.4** *P* **199** *L* **37** # r03-68

Lukacs, Miklos — Silicon Laboratories

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

The order of the first 4 paragraph in this chapter is wrong.

SuggestedRemedy

Please bring forward this paragraph, to the first position in this chapter.
"When a PD presents a valid or non-valid detection signature, it shall present the detection signature at the PI
between Positive VPD and Negative VPD of PD Mode A and PD Mode B as defined in 145.3.2. A singlesignature
PD that is powered over only one pairset shall present a non-valid detection signature on the
unpowered pairset. A dual-signature PD that is powered over only one pairset shall present a valid detection
signature on the unpowered pairset."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This text is Out of Scope. No technical justification has been provided for the change and the suggested text does not improve clarity.

Cl **145** *SC* **145.3.4** *P* **199** *L* **41** # r03-45

Yseboodt, Lennart — Philips Lighting

Comment Type **T** *Comment Status* **X** *PD Detection*

OOS

"A PD presents a non-valid detection signature at the PI while it is in a state where it does not accept power via the PI per Figure 145-25 or Figure 145-27."

This tries to describe the case where the PD does not want power at all. "at the PI" leaves open if the invalid signature is on both pairsets at once, which it should be.

SuggestedRemedy

"A PD presents a non-valid detection signature on both pairsets at the PI while it is in a state where it does not accept power via the PI per Figure 145-25 or Figure 145-27."

Proposed Response *Response Status* **W**

TFTD

Cl **145** *SC* **145.3.4** *P* **200** *L* **5** # r03-46

Yseboodt, Lennart — Philips Lighting

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

OOS

Equation 145-23 has a smaller font than other equations.

SuggestedRemedy

Change to Framemaker 'medium' size equation to align with rest of doc.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.3.6.1** *P* **203** *L* **6** # r03-109

Darshan, Yair

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

The text "Type 1 PDs that did not implement Physical Layer classification requested Class 0, with a power level equivalent to Class 3. PDs that request Class 0 are assigned Class 3 by Type 3 and Type 4 PSEs."
Missing "to".

SuggestedRemedy

Change to "Type 1 PDs that did not implement Physical
Layer classification requested Class 0, with a power level equivalent to Class 3. PDs that request Class 0 are assigned to Class 3 by Type 3 and Type 4 PSEs."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by 37

Cl **145** *SC* **145.3.6.2** *P* **205** *L* **49** # r03-47

Yseboodt, Lennart — Philips Lighting

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

"When the PD is in POWEROFF and V PD falls below V Off_PD min, the PD transitions to NOPOWER and may show a valid or invalid detection signature, and may or may not draw mark current, draw any class current, and show MPS."

VOff_PD min has been changed in the statediagram to VMark_th.

SuggestedRemedy

Change to:
"When the PD is in POWEROFF and V PD falls below VMark_th, the PD transitions to NOPOWER and 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* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.3.8** *P* **207** *L* **18** # r03-111

Darshan, Yair

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

Table 145-16 item 4 title: Remove the first occurrence of "per the assigned class"

SuggestedRemedy

See comment.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.3.8.1** *P* **210** *L* **13** # r03-48

Yseboodt, Lennart — Philips Lighting

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

"The PD shall turn on or off without startup oscillation and within the first trial at any load value when fed by V Port_PSE-2P min to V Port_PSE-2P max (as defined in Table 145-16) with a series resistance less than or equal to R Ch ."

We can't ask Class 5+ PDs to correctly start and work when connected through a 2-pair channel.
Unfortunately the fix to this is bulky.

SuggestedRemedy

"The PD shall turn on or off without startup oscillation and within the first trial at any load value when fed by V Port_PSE-2P min to V Port_PSE-2P max (as defined in Table 145-16):
- with a series resistance less than or equal to R Ch for assigned Class 1 through 4 to a single-signature PD,
- with a series resistance less than or equal to R Ch / 2 for assigned Class 5 through 8 to a single-signature PD,
- with a series resistance less than or equal to R Ch connected to a given Mode of a dual-signature PD."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.3.8.1** *P* **210** *L* **18** # r03-92

Stover, David — Analog Devices Inc.

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

"When the PD is in POWEROFF and VPD falls below Voff_PD min, the PD transitions to NOPOWER..." State diagram transition logic from POWEROFF to NOPOWER is VPD < Vmark_th.

SuggestedRemedy

Change "and VPD falls below Voff_PD min" to "and VPD falls below Vmark_th".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.3.8.3** *P* **211** *L* **29** # r03-49

Yseboodt, Lennart — Philips Lighting

Comment Type **TR** *Comment Status* **X** *PD Inrush*

"""
A PSE limits the inrush current to I Inrush and I Inrush-2P , defined in Table 145-16, which is sufficient current to charge C Port or C Port-2P to V Port_PSE-2P within T Inrush_PD max when:
-- C Port < 180 mF for single-signature PDs assigned to Class 1 through 6
-- C Port < 360 mF for single-signature PDs assigned to Class 7 or 8
-- C Port-2P < 110 mF for dual-signature PDs assigned to Class 1 through 4
-- C Port-2P < 180 mF for dual-signature PDs assigned to Class 5
"""

The latter part of this statement is extremely misleading and provides a false sense of security to PD designers.

If the PD limits the inrush current, any size of capacitor can be charged (as stated a few paragraphs earlier).

Let's consider PDs that don't perform inrush control. What do they actually do ?

option 1) Once the 100nF cap is charged to VOn_PD, the hotswap opens up and stays open for a while.
The PD PI and PSE PI voltage will collapse back to zero, at which point the PSE is allowed to reduce inrush current to 5mA.
Charging the bulk cap will take far more time than is allowed. Inrush will fail. The PD has violated the "Voff" requirement and is non-compliant.

option 2) Once the 100nF cap is charged to VOn_PD, the hotswaps opens up, but the PD stricktly follows Von_PD / VOff_PD.
The hotswap will now 'chatter' on/off repeatedly dumping the charge of the 100nF cap into the bulk cap. Essentially the PD
is performing a crude form of current limiting. Depending on how fast the PD can control the hotswap inrush will complete on time.
This is a horrible implementation, and the PD fails to comply with the 'startup without oscillation and at the first trial' requirement and is non-compliant.

Furthermore, the quoted statement only holds provided that the PD uses the delivered power to charge the cap, and not spend it on other things (like prematurely starting a DC/DC converter...).

As far as I can see it is not possible to implement a compliant PD without having inrush control.

SuggestedRemedy

This late in the process I would not suggest making substantive technical changes to inrush.
But we should change the quoted statement to avoid giving very misleading guidance to

PD designers.

Reduce quoted sentence to:
"The PSE limits the inrush current to I Inrush and I Inrush-2P, for at least TInrush_PD max, as defined in Table 145-16 and Table Table 145-29."

Proposed Response *Response Status* **W**

TFTD

Cl **145** *SC* **145.3.8.8** *P* **214** *L* **36** # r03-50

Yseboodt, Lennart Philips Lighting

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

"When any voltage in the range of 0 V to V Port_PD-2P max is applied across the PI at either polarity specified on the conductors of either Mode A or Mode B according to Table 145-20, the voltage measured across the PI for the other Mode with a 100 kOhm load resistor connected across that other Mode shall not exceed V bfd as defined in Table 145-29."

This requirement only applies when a true 2-pair voltage is applied.
In 4-pair systems, the reality is that the positive side pairs are tied together.
When one power channel is off, one would expect the PD to also meet the backfeed spec on that 'off' channel. As written, this is not required.

PDs that fail this requirement, might also be mis-identified by connection check or detection.

SuggestedRemedy

Replace by:
"When any voltage in the range of 0 V to V Port_PD-2P max is applied per any of the valid 2-pair configurations listed in Table 145-20, the voltage measured across the Mode which has a pair not connected to a supply rail, with a 100kOhm load resistor connected across that Mode shall not exceed Vbfd as defined in Table 145-29."

Proposed Response *Response Status* **W**

TFTD

Cl **145** *SC* **145.3.8.9** *P* **215** *L* **38** # r03-113

Darshan, Yair

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

In the text "Figure 145A-1 illustrates the relationship between RPD_max and RPD_min effective resistances at the PD PI as defined by Equation (145-27) and the rest of the end-to-end pair to pair effective resistance components." it is Equation 145-26 and not Equation 145-27.

SuggestedRemedy

Change from: "Figure 145A-1 illustrates the relationship between RPD_max and RPD_min effective resistances at the PD PI
as defined by Equation (145-27) and the rest of the end-to-end pair to pair effective resistance components."
To: "Figure 145A-1 illustrates the relationship between RPD_max and RPD_min effective resistances at the PD PI
as defined by Equation (145-26) and the rest of the end-to-end pair to pair effective resistance components."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.3.8.9** *P* **215** *L* **52** # r03-101

Darshan, Yair

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

Icon-2P_unb, Iunbalance and Equation 145-26 (Rpd_min/max) where derived based on Pclass_PD per Table 145-26 which doesn't include PClass_PD under extended power conditions. Equation 145-26 doesn't apply to class 8 under the conditions of extended power.
For class 8=71.3W at the PD, Icon-2P_unb is 0.943A according to the 4-pair model parameters per Rpse_min/max, Rchan_min/max and Rpd_min/max.
In Extended power the PD consumes 89.7W at 2.65m cable lenght, the currents in CLASS 8 will be Icon-2P_unb=1.1A, Ipeak-2P_unb=1.148A for Ppeak=1.05*89.7W and ILIM-2P=1.15A under the same 4-pair model parameters in the spec. As a result, PD will need to improved its balance by selecting tighter ratio of Rpd_max/Rpd_min when extended power is used for class 8.

SuggestedRemedy

Add the following text after line 51:
"Meeting Iunbalance for Class 5 to Class 8 by meeting Equation 145-26 is based on the 4-pair model which is described by Equation 145-27 and Equations 145-26 when the requested Pclass_PD is specified per Table 145-26. When Pclass_PD is specified per 145.3.8.2.1, Equation 145-26 is no longer valid and tighter ratio of Rpd_max to Rpd_min should be used in order to meet Iunbalance.

Proposed Response *Response Status* **W**

TFTD

Cl **145** *SC* **145.3.9** *P* **217** *L* **46** # r03-97

Stover, David — Analog Devices Inc.

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

"A PD shall meet the TMPS_PD and TMPDO_PD requirements...when long_class_event = TRUE." Shouldn't a Type 3/4 PD meet these requirements when long_class_event = FALSE as well?

SuggestedRemedy

Strike "when long_class_event = TRUE".

Proposed Response *Response Status* **W**

TFTD

See comment r02-84 from last cycle to see how we ended up here. I would love better text, but I haven't come up with any yet.

See comment 51

Cl **145** *SC* **145.3.9** *P* **217** *L* **46** # r03-51

Yseboodt, Lennart — Philips Lighting

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

"A PD shall meet the T MPS_PD and T MPDO_PD requirements with any series resistance in the range of RChan between the PD PI and the source when long_class_event = TRUE."

RChan is a fixed number, not a range.
We're aiming for any resistance from 0 to RCh Ohms.

SuggestedRemedy

Change to:
"A PD shall meet the T MPS_PD and T MPDO_PD requirements with any series resistance in the range of 0 Ohm to RCh between the PD PI and the source when long_class_event = TRUE."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

TFTD for 97

Cl **145** *SC* **145.3.9** *P* **218** *L* **8** # r03-112

Darshan, Yair

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

Table 145-32 item 1 title. The MPS should be per the requested class and not the per the assigned class. It is not cost effective to require it per the assigned class from the following reasons:
-The MPS in PDs is normally determined by the manufacture per the worst case requested PD_class. In this way all the lower classes will be detected without the need to switch between MPS values.
-It is not cost effective and doesn't give any benefit to ask PD to change its MPS from 16mA to 10mA when the assigned class is changed from Class>=5 to <=4.
-The PD can't change its MPS per the assigned class at zero time. there is no mechanism in the PSE/PD to handle it, which will result with interoperability issues.
-Even if we define the time delay required for PD to change its MPS per the assigned class, still there is nothing in PSE state machine to handle it.
We can consider also to determine the MPS per the PD type but I am note sure that is better the requested class at least due to the "to keep consistency" argument.
Therefore it is recommended to require the MPS to be determined by the requested class.

SuggestedRemedy

Change the MPS title from:
"Total input current per the assigned Class, for single-signature PDs"
To:
"Total input current per the requested Class, for single-signature PDs"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Making it per assigned class does not lead to any interoperability problems as the lower the class, the lower the Ihold requirement. This means that PDs that lower their Ihold when they get demoted to a lower class still meet the requirement since their Ihold is greater than required. Making it per requested class means that Type 3/4 PDs have to burn significantly more power when connected to Type 1/2 PSEs and the timing reverts back to the "long" MPS timings.

Cl **145** *SC* **145.5.2** *P* **232** *L* **40** # r03-52

Yseboodt, Lennart — Philips Lighting

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

OOS

"Under normal operation, an LLDPDU containing a Power via MDI TLV with an updated value for the 'PSE allocated power value' field shall be sent within 10 seconds of receipt of an LLDPDU containing a Power via MDI TLV where the 'PD requested power value' field is different from the previously communicated value."

a) There is no definition for 'normal operation'
b) requirement fails to specicy who needs to do the sending
c) does not address dual-signature

SuggestedRemedy

Replace by:
"The PSE shall send an LLDPDU containing a Power via MDI TLV with an updated value for the 'PSE allocated power value' field, 'PSE allocated power value Alternative A' field, and 'PSE allocated power value Alternative B' field within 10 seconds of receiving an LLDPDU containing a Power via MDI TLV where the 'PD requested power value' field, 'PD requested power value for Mode A' field, or 'PD requested power value for Mode B' field is different from the previously communicated value."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.5.2** *P* **232** *L* **45** # r03-53

Yseboodt, Lennart — Philips Lighting

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

"Under normal operation, an LLDPDU containing a Power via MDI TLV with an updated value for the 'PD requested power value' field shall be sent within 10 seconds of receipt of an LLDPDU containing a Power via MDI TLV where the 'PSE allocated power value' field is different from the previously communicated value."

a) There is no definition for 'normal operation'
b) requirement fails to specicy who needs to do the sending
c) does not address dual-signature

SuggestedRemedy

Replace by:
"The PD shall send an LLDPDU containing a Power via MDI TLV with an updated value for the 'PD requested power value' field, 'PD requested power value for Mode A' field, and 'PD requested power value for Mode B' field within 10 seconds of receiving an LLDPDU containing a Power via MDI TLV where the 'PSE allocated power value' field, 'PSE allocated power value Alternative A' field, or 'PSE allocated power value Alternative B' field is different from the previously communicated value."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.5.3.2.2** *P* **233** *L* **44** # r03-54

Yseboodt, Lennart — Philips Lighting

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

OOS

The sentence "This variable is mapped from the aLldpXdot3LocPSEAutoclassCompleted (30.12.2.1.18n) attribute." has the wrong direction of mapping.

SuggestedRemedy

Change to:
"This variable is mapped into the aLldpXdot3LocPSEAutoclassCompleted (30.12.2.1.18n) attribute."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.5.3.3.2** *P* **233** *L* **51** # r03-55

Yseboodt, Lennart Philips Lighting

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

OOS

The management object mentioned in the sentence is not correct. "This variable is mapped from aLldpXdot3RemPDAutoclassRequest (30.12.3.1.18o) and assigned through Table 145-38."

SuggestedRemedy

Change to "aLldpXdot3RemAutoclassRequest".

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.5.3.2.2** *P* **233** *L* **52** # r03-56

Yseboodt, Lennart Philips Lighting

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

OOS

The sentence "This variable is mapped from the aLldpXdot3LocPSEAutoclassSupport (30.12.2.1.18m) attribute." has the wrong direction of mapping.

SuggestedRemedy

Change to:
"This variable is mapped into the aLldpXdot3LocPSEAutoclassSupport (30.12.2.1.18m) attribute."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.5.3.2.5** *P* **239** *L* **19** # r03-57

Yseboodt, Lennart Philips Lighting

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

The variable 'local_system_change' is read before it is initialized in the DLL state diagrams.

SuggestedRemedy

Add statement "local_system_change <= FALSE" to the INITIALIZE state of Figure 145-38, 145-40, 145-41, 145-42, 145-44, and 145-45.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.5.3.3.1** *P* **243** *L* **27** # r03-58

Yseboodt, Lennart Philips Lighting

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

OOS

The sentence "This variable is mapped from aLldpXdot3LocPDAutoclassRequest (30.12.3.1.18o)." has the wrong direction of mapping.
And the object name is misspelled.

SuggestedRemedy

Change to:
"This variable is mapped into aLldpXdot3LocAutoclassRequest (30.12.3.1.18o)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.5.3.3.1** *P* **243** *L* **39** # r03-59

Yseboodt, Lennart Philips Lighting

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

OOS

The sentence "This variable is mapped from the aLldpXdot3LocPDRequestedPowerValue attribute (30.12.2.1.17)."
Wrong direction of mapping.

SuggestedRemedy

Change to:
"This variable is mapped into the aLldpXdot3LocPDRequestedPowerValue attribute (30.12.2.1.17)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.5.3.3.1** *P* **243** *L* **44** # r03-60

Yseboodt, Lennart — Philips Lighting

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

OOS

The sentence "This variable is mapped from the aLldpXdot3LocPDRequestedPowerValueA and aLldpXdot3LocPDRequestedPowerValueB attribute (30.12.2.1.17a and 30.12.2.1.17b)."

Wrong direction of mapping.

SuggestedRemedy

Change to:
"This variable is mapped into the aLldpXdot3LocPDRequestedPowerValueA and aLldpXdot3LocPDRequestedPowerValueB attribute (30.12.2.1.17a and 30.12.2.1.17b)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.5.3.3.1** *P* **243** *L* **47** # r03-80

Law, David — Hewlett Packard Enter

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

The description of values of the variable PDRequestedPowerValue_mode(X) rerads 'Values: 0' which doesn't see correct.

SuggestedRemedy

Change 'Values: 0' to read 'Values: 0 through pd_dllmax_value_mode(X), and 0xACAC'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Change 'Values: 0' to read 'Values: 0 through pd_dllmax_value_mode(X)'

Cl **145** *SC* **145.5.3.4.2** *P* **249** *L* **27** # r03-61

Yseboodt, Lennart — Philips Lighting

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

OOS

The sentence "This variable is mapped from the aLldpXdot3LocPDRequestedPowerValueA and aLldpXdot3LocPDRequestedPowerValueB attribute (30.12.2.1.17a and 30.12.2.1.17b)."

You guessed it... wrong direction of mapping.

SuggestedRemedy

"This variable is mapped into the aLldpXdot3LocPDRequestedPowerValueA and aLldpXdot3LocPDRequestedPowerValueB attribute (30.12.2.1.17a and 30.12.2.1.17b)."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.5.3.4.2** *P* **249** *L* **27** # r03-73

Law, David — Hewlett Packard Enter

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

The PDRequestedPowerValue_mode(X)variable definition states that 'This variable is mapped from the aLldpXdot3LocPDRequestedPowerValueA and aLldpXdot3LocPDRequestedPowerValueB attribute (30.12.2.1.17a and 30.12.2.1.17b).' however I believe that PDRequestedPowerValue_mode(X) is sourced by the dual-signature PD power control state diagrams and this is confirmed by Table 145-40 'Attribute to state diagram variable cross reference for dual-signature PDs' which shows the direction being from the state diagram to the variable.

SuggestedRemedy

Based on the similar PSEAllocatedPowerValueEcho_mode(X) variable (page 250, line 9) change the variable definition to read 'This variable is updated by the PD state diagram. This variable is mapped into the aLldpXdot3LocPDRequestedPowerValueA and aLldpXdot3LocPDRequestedPowerValueB attribute (30.12.2.1.17a and 30.12.2.1.17b). Values: 0 through pd_dllmax_value_mode(X)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.5.3.4.2** *P* **249** *L* **33** # r03-74

Law, David — Hewlett Packard Enter

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

The dll_4PID variable definition states that 'This variable is assigned through Table 145-38.' I think the cross reference to Table 145-38 is incorrect as Table 145-38 is titled 'Attribute to state diagram variable cross reference for PSEs' whereas dll_4PID is a dual-signature PD power control state diagram variable and dll_4PID does not appear in Table 145-38. Instead I believe the cross reference should be to Table 145-40 'Attribute to state diagram variable cross reference for dual-signature PDs' where the dll_4PID variable can be found.

Further, the text states that this is 'A variable indicating the state of the PD 4PID bit in the 'Power type/source/priority' field'. This bit however is the source of the PD 4PID bit in the 'Power type/source/priority' field as is confirmed by the mapping in Table 145-40 which shows the direction as being from the dll_4PID variable to the aLldpXdot3LocPD4PID attribute as well as the description of the PD 4PID bit in subclause 79.3.2.4.2a 'PD 4PID'.

SuggestedRemedy

Based on the similar PSEAllocatedPowerValueEcho_mode(X) variable (page 250, line 9) change the variable definition to read 'This variable is updated by the PD state diagram. This variable maps into the aLldpXdot3LocPD4PID attribute (30.12.2.1.18k).'.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.5.3.4.5** *P* **253** *L* **6** # r03-79

Law, David — Hewlett Packard Enter

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

On review of Figure 145-45 'Dual-signature PD power control state diagram in 2-pair mode' it appears that during 2-pair mode the 'original' TLV fields are used, such as 'PD Requested power value' rather than the 'new' mode A and B fields such as 'PD requested power value Mode A' and 'PD requested power value Mode B'. This is based on the variables that are tested and assigned in Figure 145-45, for example the assignments to 'PDRequestedPowerValue' in the IDLE, INITIALIZE and MIRROR_UPDATE states, and not to 'pd_initial_value_mode(P)'. Similarly the variable 'PDRequestedPowerValue' is tested on the exit from RUNNING state, not 'pd_initial_value_mode(P)'.

As a result:

(a) Subclause 145.5.3.4.2 'Variables', which states 'The PD power control state diagram (Figure 145-44 and Figure 145-45) use the following variables', is missing the definition for the following variables used in Figure 145-45.

PDRequestedPowerValue
MirroredPDRequestedPowerValueEcho
MirroredPSEAllocatedPowerValue
PSEAllocatedPowerValueEcho
PDMaxPowerValue
TempVar

(b) Table 145-40 'Attribute to state diagram variable cross reference for dual-signature PDs' is missing the following mappings:

aLldpXdot3LocPDRequestedPowerValue <= PDRequestedPowerValue
aLldpXdot3RemPDRequestedPowerValue => MirroredPDRequestedPowerValueEcho
aLldpXdot3RemPSEAllocatedPowerValue => MirroredPSEAllocatedPowerValue
aLldpXdot3LocPSEAllocatedPowerValue <= PSEAllocatedPowerValueEcho

SuggestedRemedy

Add the following to Subclause 145.5.3.4.2 'Variables':

PDRequestedPowerValue
Integer that indicates the PD requested power value in the PD in units of 0.1 W. The value is the maximum input average power (see 145.3.8.2) the PD requests. This variable is mapped from the aLldpXdot3LocPDRequestedPowerValue attribute (30.12.2.1.17).
Values: 0 through pd_dllmax_value, and 0xACAC

MirroredPDRequestedPowerValueEcho
The copy of the 'PD Requested Power Value' field in the Power Via MDI TLV that the PD receives from the remote system. This variable is mapped from the aLldpXdot3RemPDRequestedPowerValue attribute (30.12.3.1.17).
Values: 0 through 999, and 0xACAC

MirroredPSEAllocatedPowerValue
The copy of the 'PSE Allocated Power Value' field in the Power Via MDI TLV that the PD receives from the remote system in units of 0.1 W. This variable is mapped from the aLldpXdot3RemPSE-AllocatedPowerValue attribute (30.12.3.1.18).
Values: 1 through 999, and 0xACAC

PSEAllocatedPowerValueEcho
This variable is updated by the PD state diagram. This variable maps into the aLldpXdot3LocPSEAllocatedPowerValue attribute (30.12.2.1.18).
Values: 0 through 999, and 0xACAC

PDMaxPowerValue
Integer that indicates the actual PD power value of the local system in units of 0.1 W. The actual PD power value for a PD is the maximum input average power (see 145.3.8.2) the PD ever draws under the current power allocation.
Values: 1 through 999, and 0xACAC

TempVar
A variable used to store Power Value in units of 0.1 W.
Values: 0 through 999, and 0xACAC

Add the following mappings to Table 145-40 'Attribute to state diagram variable cross reference for dual-signature PDs':

aLldpXdot3LocPDRequestedPowerValue <= PDRequestedPowerValue
aLldpXdot3RemPDRequestedPowerValue => MirroredPDRequestedPowerValueEcho
aLldpXdot3RemPSEAllocatedPowerValue => MirroredPSEAllocatedPowerValue
aLldpXdot3LocPSEAllocatedPowerValue <= PSEAllocatedPowerValueEcho

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.5.5.1** *P* **255** *L* **28** # r03-88

Tremblay, David Hewlett Packard Enter

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

Interoperability issue - state change procedure does not cover how to handle power allocation values between 714-999

SuggestedRemedy

TFTD - Add procedure to cover class 8 exception allowing PSEAllocatedPowerValue to assign 714-999

Proposed Response *Response Status* **W**

TFTD

Cl **145** *SC* **145.5.5.2** *P* **255** *L* **47** # r03-89

Tremblay, David Hewlett Packard Enter

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

Interoperability issue - state change procedure does not cover how to handle power allocation values between 714-999

SuggestedRemedy

TFTD - Add procedure to cover class 8 exception allowing PDRequestedPowerValue to assign 714-999

Proposed Response *Response Status* **W**

TFTD

Cl **145** *SC* **145.5.6.2** *P* **257** *L* **11** # r03-90

Tremblay, David Hewlett Packard Enter

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

Interoperability issue - state change procedure does not cover how to handle power allocation values between 714-999

SuggestedRemedy

TFTD - Add procedure to cover class 8 exception allowing PSEAllocatedPowerValue to assign 714-999

Proposed Response *Response Status* **W**

TFTD

Cl **145** *SC* **145.5.6.3** *P* **257** *L* **31** # r03-91

Tremblay, David Hewlett Packard Enter

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

Interoperability issue - state change procedure does not cover how to handle power allocation values between 714-999

SuggestedRemedy

TFTD - Add procedure to cover class 8 exception allowing PDRequestedPowerValue to assign 714-999

Proposed Response *Response Status* **W**

TFTD

Cl **145** *SC* **145.5.6.3** *P* **257** *L* **40** # r03-62

Yseboodt, Lennart — Philips Lighting

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

The sentence "A PD connected to a PSE that supports Autoclass, can initiate an Autoclass request, to optimize the allocated power budget, through the aLldpXdot3LocPDAutoclassRequest (30.12.2.1.18o) attribute in the oLldpX-dot3LocSystemsGroup object class."

Has a wrong object name for PDAutoclassRequest variable.
Also, comma after 'Autoclass' needs to go (right?)

SuggestedRemedy

Change to:
"A PD connected to a PSE that supports Autoclass can initiate an Autoclass request, to optimize the allocated power budget, through the aLldpXdot3LocAutoclassRequest (30.12.2.1.18o) attribute in the oLldpX-dot3LocSystemsGroup object class."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145** *SC* **145.6.5** *P* **259** *L* **3** # r03-70

Peker, Arkadiy — Microsemi Corporation

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

The text "The AC component is up to 175 Vp at 20 Hz to 60 Hz with a 100 ohm source resistance." is missing the fact that the AC voltage which is the ringing voltage is not continuous and has a cadence spec (duty cycle like but with integer number of AC cycles for the on time and off time which may be in the range of 2 sec on , 4sec off or 1sec on, 4 sec off i.e. a ratio of 0.2 to 0.33) which actually significantly reduces the average power dissipation on the device when applied. In addition, the test time is not defined. It doesn't make sense that the test time is infinite since this components are became very hot and may cause fire hazard.

SuggestedRemedy

Change from: "The AC component is up to 175 Vp at 20 Hz to 60 Hz with a 100 ohm source resistance."
To:
Option 1: Without definition for test time.
"The AC component is up to 175 Vp at 20 Hz to 60 Hz with a cadence spec per the relevant national standard with a 100 ohm source resistance."
Option 2: With definition for test time.
"The AC component is up to 175 Vp at 20 Hz to 60 Hz with a 100 ohm source resistance with a cadence spec per the relevant national standard, for a test time duration greater than 5 minutes.

Proposed Response *Response Status* **W**

TFTD

Arkadiy, did you mean "with a test duration less than 5 minutes."? Otherwise the test duration can still be infinite.

Cl **145** *SC* **145.6.5** *P* **259** *L* **3** # r03-114

Darshan, Yair

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

The text "The AC component is up to 175 Vp at 20 Hz to 60 Hz with a 100 ohm source resistance." has not sufficient data in order to test the "shall" that follows this description.
The missing parts are:
- the cadence (depends on the national telephony standard)
-The test time duration (implementation specific, but we need to define some reasonable minimum for interoperability).

SuggestedRemedy

Change from: "The AC component is up to 175 Vp at 20 Hz to 60 Hz with a 100 ohm source resistance."
To:
"The AC component is up to 175 Vp at 20 Hz to 60 Hz with a 100 ohm source resistance with a cadence per the relevant national standard, for a test time duration greater than 5 minutes.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

OBE by 70

Cl **145A** *SC* **145A.5** *P* **290** *L* **46** # r03-116

Darshan, Yair

Comment Type **T** *Comment Status* **D** *Annex*

In the text "PD pair-to-pair voltage difference (e.g. Vf1-Vf3) was limited to 60 mV while generating values
for IUnbalance-2P under worst case conditions.", missing information that (Vf1-Vf3) maximum value can be found by measuring Vf1 and Vf3 at low current e.g. 1mA since at high current the effect of Vf3-Vf1 may go below 60mV.

SuggestedRemedy

Add a note after line 47:
"Note --- In order to measure the maximum value of Vf1-Vf3, an input current in the range of 1mA to 10mA is recommended."

Proposed Response *Response Status* **W**

PROPOSED REJECT.

TFTD

Yair, I don't undstand the value of adding this text and it is OOS.

Cl **145B** *SC* **145B.1** *P* **293** *L* **13** # r03-66

Lukacs, Miklos Silicon Laboratories

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

Typo: the word "the" is missing from "Each of following sample timing diagrams show..."

SuggestedRemedy

Cange the sentence to: "Each of the following sample timing diagrams show..."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **145C** *SC* **145C.3** *P* **302** *L* **43** # r03-63

Yseboodt, Lennart Philips Lighting

Comment Type **T** *Comment Status* **D** *Annex*

The sentence "Using 23 AWG and 22 AWG horizontal cable or larger AWG patch cords reduces the per meter cable DCR; see Table 145C-3."

"Larger AWG" is very ambiguous... larger copper diameter, or larger number (which would be wrong because it results in less copper).

SuggestedRemedy

Change to:
"Using 23 AWG and 22 AWG horizontal cable or lower AWG number patch cords reduces the per meter cable DCR; see Table 145C-3."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.