Cl **33** *SC* **2.3.6** *P* **26** *L* **47** # 165

Law, David 3Com

Comment Type **T** *Comment Status* **D** *33.2.7*

See previous comment on default behavior, a Type 1 should default to Class 0, a Type 2 to Class 4.

SuggestedRemedy

Change the text 'Class 0 is returned if an invalid classification signature is detected.' to read ' If an invalid classification signature is detected Class 0 is returned by a Type 1 PSE, Class 4 is returned by a Type 2 PSE.'

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **2.7** *P* **17** *L* # 226

Diab, Wael Broadcom

Comment Type **ER** *Comment Status* **X** *33.2.7*

33.2.7 can be made into the intro section for PSE classification per my next comment. This comment addresses the contents of the introductory section:

There needs to be an introduction that details what a Type-2 PSE can do. Specifically, that it can do either a Dat-Link or Physical Layer classification. It is required to do one or the other. The section can then point to a section (a) that details the Physical Layer Classification and a section (b) that details Data-Link Layer Classification.

Currently, there is no mention of the Link Layer Classification in the openning section. Further it is confusing to get to the Link Layer option

SuggestedRemedy

One way to do this is to retain the paragraph starting at line 43 as teh opening paragraphe. Then:

Please append the following sentence after the current sentence that reads "A Type 2 PSE may* perform hardware Physical Layer classification of a PD by applying voltage and measuring current, as specified in 33.2.7.2a."

"A Type 2 PSE may perform Data Link Layer classification of a PD by applying voltage and measuring current, as specified in 33.2.7.2b."

Please insert the following sentence as the last sentence in the section: "Type 2 PSEs Shall perform either Physical Layer or Data Link Layer Classification"

* Please note that I have asked for a seperate change to the retained paragrpah to include the word "may" in a seperate comment.

Proposed Response *Response Status* **W**

see Law 170
see 227, 49

Cl **33** *SC* **2.7** *P* **17** *L* **25** # 227

Diab, Wael — Broadcom

Comment Type **ER** *Comment Status* **X** *33.2.7*

This section is very confusing. We dive into Physical Layer classification and then do Data-Link Layer Classification. I would suggest that we make 33.2.7 a general introduction to classification. We then take 33.2.7 and 33.2.7a and make them subclauses of this new geenral section.

For the content of the general section on classification, I will submit a seperate comment (my previous comment in the .csv file).

SuggestedRemedy

I would suggest that we make 33.2.7 a general introduction to classification. We then take 33.2.7 and 33.2.7a and make them subclauses of this new geenral section.

Proposed Response *Response Status* **W**

see Law 170
see 226, 49

Cl **33** *SC* **2.7** *P* **17** *L* **25** # 49

Patoka, Martin — TI

Comment Type **ER** *Comment Status* **X** *33.2.7*

LL classification was moved to the management section. In order to make the requirements clear, we need to pull together the endspan and midspan requirements. I believe that we should use this paragraph as an overview. Paragraph 33.3.7.2a text (p18 line 34 & ff) should be moved to 2.7. The equivalent of stnaford_1_0707 page 16 should be included as a guide.

SuggestedRemedy

A Type 1 PSE may optionally classify a PD. If a Type 1 PSE successfully completes detection of a PD, and the PSE does not classify the PD using hardware Physical Layer classification, then the PSE shall assign the PD to Class 0.

Type 2 PSEs shall classify to determine the PD type. Endspan PSEs shall perform either Type 2 physical layer classification, or Type 1 Physical Layer classification and Type 2 Link Layer Classification per 33.6. Midspan TYpe 2 PSEs shall perform Type 2 Physical layer classification per 33.2.7.2a.

If a type 2 PSE classifies a type 1 PD, the PSE need only perform the first type 2 hardware classification event. Type 2 Physical Layer and Type 2 Link Layer classification permit mutual classification.

A successful classification of a PD requires:
a) Successful PD detection, and subsequently,
b) Successful Type 1 or Type 2 Class 0–4 hardware Physical Layer classification.
A PSE may remove power to a PD that exceeds the maximum power limit for its advertised class.
A Type 1 PSE performs optional hardware Physical Layer classification of a PD by applying voltage and
measuring current, as specified in 33.2.7.2. A Type 2 PSE performs hardware Physical Layer classification
of a PD by applying voltage and measuring current, as specified in 33.2.7.2a.
The PSE hardware Physical Layer classification circuit should have adequate stability to prevent oscillation
when connected to a PD.

Proposed Response *Response Status* **W**

see Law 170
see 226,227

Cl **33** *SC* **2.7** *P* **17** *L* **28** # 164

Law, David 3Com

Comment Type **TR** *Comment Status* **D** *33.2.7*

On the long standing basis that we should be conservative on what we send but liberal on what we receive I think we should state what should be done if classification fails for some reason for both a Type 1 PSE and a Type 2 PSE.

In IEEE Std 802.3-2005 we state 'If a PSE successfully completes detection of a PD, and the PSE does not classify the PD in Class 1, 2, 3, or 4, then the PSE shall assign the PD to Class 0.' Now this text does not state the reason why the PSE does not classify the PD so this seems to apply to [a] a PSE that doesn't perform classification and [b] a PSE that does perform classification but when the classification cycle occurs the values return do not match a value. I believe this is confirmed by the State Diagram (figure 33-6) which states in the do_classification function that definition (subclause 33.2.3.6) that 'Class 0 is returned if an invalid classification signature is detected'.

One approach would seem to be to apply the same approach to IEEE P802.3at, if hardware classification fails regardless of Type treat the PD as a class 0. There is however one edge case if a Type 2 PD has a fault such that a PSE cannot detect it as a Type 2 yet it is still capable of detecting a Type 2 PSE. In this case the PSE would treat it as Class 0 and possibly limit it to 15.4W while the PD having detected a Type 2 PSE will operate as if 36W is available. Based on this I guess the default has to be Class 0 for Type 1 and Class 4 for a Type 2.

SuggestedRemedy

Change the text to read 'If a PSE successfully completes detection of a PD, but the PSE fails to classify the PD as a Class 1, 2, 3, or 4 using hardware classification, then the a Type 1 PSE shall assign the PD to Class 0 a Type 2 PSE shall assign the PD to be a Class 4.'.

Proposed Response *Response Status* **W**

Change the text to read 'If a PSE successfully completes detection of a PD, but the PSE fails to complete classification of the PD, then the a Type 1 PSE shall assign the PD to Class 0 a Type 2 PSE shall assign the PD to be a Class 4.'.

Cl **33** *SC* **2.7** *P* **17** *L* **31** # 170

Law, David 3Com

Comment Type **TR** *Comment Status* **D** *33.2.7*

The draft is in conflict with the folowing motions:

March 2006

The IEEE 802.3at Task Force affirms that a PD requiring more than 12.95W will support a Layer-1 Classification extension and a Layer-2 Classification mechanism. Endpoint PSEs must support Layer-2 classification or Layer-1 classification extension for PDs requiring more than 12.95W.

November 2006

Relevant page from diab_schindler_1106_1.pdf:
Simple Classification Baseline
PSE
- AT L2: Detects and classifies class 4. Communicates with PD in L2. Mutual ID achieved.
- AT L1: Detects and classifies class 4. Repeats classification ("dumb ping-pong"). Mutual ID achieved.
- AT PSEs shall choose the classification extension used.
- Legacy PSEs: Unchanged PD
- AT PD: Use class 4 for all 802.3at PDs. After 1st classification, either
- L2 communication which identifies 802.3at endspan
- Second classification ("dumb ping-pong"). Identifies 802.3at midspan
- Power-on after one classification cycle. Identifies legacy PSE
- Legacy PDs: Unchanged
Power Limits after classifying a Class 4 PD
- AT L2 PSEs enforce legacy limit until L2 is up
- AT L1 PSEs enforce maximum power limit per 802.3at objective
- AT PDs operate under class 0 limits until either L2 is up or second class and power-on
- Legacy PDs and PSEs Unchanged

SuggestedRemedy

Update the draft as follows:

Subclause 33.2.7, page 31, line 31.
Change 'A Type 2 PSE shall perform classification using Type 2 Physical Layer classification and may optionally perform Data Link Layer classification.' to read 'A Type 2 Midspan PSE shall perform classification using Type 2 Physical Layer classification and may optionally perform Data Link Layer classification. A Type 2 Endpoint PSE shall perform classification using either Type 2 Physical Layer classification or Data Link Layer classification.'

Subclause 33.2.7, page 31, line 44
Change 'A Type 2 PSE performs Physical Layer classification of a PD ..' to read 'A Type 2 PSE that performs Physical Layer classification of a PD does so ..'.

Subclause 33.2.9, page 43, line 21
Change 'Where a PSE does not provide either of the Physical Layer classification functions specified in 33.2.7, all PDs are treated as Class 0 Type 1 PDs.' to read

Where a PSE does not provide Physical Layer classification functions (see 33.2.7), all PDs are treated as Class 0 Type 1 PDs until successful layer Data Link Layer classification is performed.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **2.7** *P* **17** *L* **31** # 180

Schindler, Fred Cisco Systems

Comment Type **TR** *Comment Status* **D** *33.2.7*

A PSE does not have to perform Type 2 Physical Layer classification in order to ensure mutual identification with a type2 PD.

SuggestedRemedy

Replace the sentence on line 31 with:

A Type 2 PSE shall perform type 2 Physical Layer classification and/or Data Link Layer classification.

Proposed Response *Response Status* **O**

see 71

A Type 2 PSE shall perform Physical Layer classification or Data Link Layer classification or both.

A Type 2 PSE may implement PL or DLL classification or both.

A Type 2 PSE that does not perform DLL classification shall implement PL classification.

Question:
Should a Type 2 PSE be required to implement PL classification?

Y: 6, N: 9, A: 2

.3 only:

Y: 3, N: 7, A: 1

Question:
Do we reject the comment?

Y: 8, N: 8, A: 2

Cl **33** *SC* **2.7** *P* **17** *L* **32** # 71

Patoka, Martin TI

Comment Type **TR** *Comment Status* **X** *33.2.7*

"A Type 2 PSE shall perform classification using Type 2
hardware Physical Layer classification and may optionally perform link layer Data Link Layer classification."

We had a motion November 2006 that a type 2 PSE may choose its extension, which I interpret to mean that an endspan need only perform L2 class. This was recorded in the motion aggregator.

SuggestedRemedy

An Type 2 endspan PSE must perform classification using Type 2
Physical Layer classification or Type 2 Data Link Layer classification. A midspan PSE must perform Type 2 Physical Layer classification.

Proposed Response *Response Status* **W**

see 180

Cl **33** *SC* **2.7** *P* **17** *L* **35** # 117

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **D** *33.2.7*

Draft0.9:
It is not clear from the text that A Type 2 PSE must do at least Type 1 Physical Layer classification in order to read Class 4 PDs that are Type 2 PDs by definition.
Class 4 IS THE UNIQUE IDENTIFICATION MEANS as required by the 5 Criteria.
Therefore:
PSE Type 2 must do at least 1st finger Physical layer classification to read if it class 1,2,3 or 4.
PSE Type 2 may omits the 2nd finger if it is using Layer 2 classification.
A type 2 PDs must implement both Layer 2 AND Physical layer classification.

SuggestedRemedy

Add the following text at line 35:

"Type 2 PSE shall implement at least one classification event of the Physical Layer Classification as per table 33-4a, to uniquely identify if PD is Type 1 or Type 2. Type 2 unique signature is Class 4 and represents PD max. Power.
If PSE is equipped with Layer 2 classification, it may later communicate with PD type 2 for lower PD power requirements"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Class 4 is the unique identifier required for midspans and that is why PDs are required to display class 4, but an endspan PSE can choose to not class the PD at all and use L2 as the mutual identification method. Since PDs are required to do both, the outcome will be full power in both cases.

[pulled out of the 33.2.7.bucket]

Cl **33** *SC* **2.7** *P* **17** *L* **44** # 216

Diab, Wael — Broadcom

Comment Type **T** *Comment Status* **D** *33.2.7*

Second sentence needs to have the word may.

SuggestedRemedy

Please rewrite sentence from "A Type 2 PSE performs hardware Physical Layer classification of a PD by applying voltage and measuring current, as specified in 33.2.7.2a."

"A Type 2 PSE may perform hardware Physical Layer classification of a PD by applying voltage and measuring current, as specified in 33.2.7.2a."

Proposed Response *Response Status* **W**

see 180

I disagree that the word may adds any value. See 117 for reasoning. See also 58

Cl **33** *SC* **2.7** *P* **17** *L* **44** # 58

Patoka, Martin — TI

Comment Type **T** *Comment Status* **D** *33.2.7*

"A Type 2 PSE performs Physical Layer classification
of a PD by applying voltage and measuring current, as specified in 33.2.7.2a."

GIven that an endspan PSE may prefer to do L2 classification, this sentence should be ammended.

SuggestedRemedy

"A Type 2 PSE performs optional Physical Layer classification
of a PD by applying voltage and measuring current, as specified in 33.2.7.2a."

Proposed Response *Response Status* **W**

see 180
See 216

Cl **33** *SC* **2.7.1** *P* **18** *L* **1** # 48

Patoka, Martin TI

Comment Type **ER** *Comment Status* **D** *33.2.7*

"Type 2 PDs are required to implement hardware Physical Layer classification so that a Type 2 PSE implementing
only Type 2 hardware Physical Layer classification may simultaneously indicate indicates its presence
and identify identifies the Type 2 PD's power requirements."

This text places a PD requirement in a PSE requirement section.

SuggestedRemedy

Either turn this text into an informational note or strike.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Make it a note - no shall as this is the PSE section. There is a corresponding shall in the PD section.

See 162

Cl **33** *SC* **2.7.1** *P* **18** *L* **16** # 163

Law, David 3Com

Comment Type **T** *Comment Status* **X** *33.2.7*

There are Type 1 and Type 2 PSEs, Type 1 and Type 2 PDs, and there is Type 1 and Type 2 hardware classification. It is therefore unclear what the Type values in the 'Usage' column in Table 33-3 is in reference to. It looks like it is meant to refer to PSE type but Type 1 isn't correct in 0 to 3 as classification is optional.

SuggestedRemedy

Consider removing 'Usage' column.

Proposed Response *Response Status* **W**

see 9, 244

Cl **33** *SC* **2.7.1** *P* **18** *L* **27** # 113

Darshan, Yair Microsemi Corporation

Comment Type **TR** *Comment Status* **X** *33.2.7*

Draft0.9:
According to the classification base line concept and associated motions the text should explicitly note that PD that asks more power then advertised in L1 hardware classification is not compliant.

The rational for this was to prevent interoperability issues when a Type 2 PD is connected to end span and get service while if connected to Midspan it will not work due to the fact that Midspan cant support L2.
As a result we mandate PD type 2 to support both L1 and L2 classification and specify that hardware classification results are max. Power values.

In addition it is already specified in the 802.3 specification that all numbers of class power are maximum numbers.

SuggestedRemedy

Add the following text right after Table 33:
"PD that asks more power then advertised in L1 hardware classification is not compliant to this standard".

Proposed Response *Response Status* **O**

Cl **33** *SC* **2.7.2a** *P* **18** *L* **42** # 59

Patoka, Martin TI

Comment Type **T** *Comment Status* **X** *33.2.7*

"The Type 2 PSE shall provide to the PI VClass as defined in Table 33–4a."

H/W L1 class is optional.

SuggestedRemedy

"The Type 2 PSE may optionaly provide an enhanced hardware classification to the PI which consists of the following sequence where levels are defined in Table 33–4a. The PSE provides strong sourcing current and weak sinking current.
* Apply Vclass
* Allow settling time
* Measure Iclass
* Apply Vmark
* Allow settling time
* Apply Vclass
* ...

Proposed Response *Response Status* **O**

Cl **33** *SC* **2.7.2a** *P* **19** *L* **22** # 132

Stanford, Clay — Linear Technology

Comment Type **T** *Comment Status* **D** *33.2.7*

Text allows PSE to drop port voltage to reset during 2-event classification. Text should disallow PSE from dropping port voltage during classfication.

SuggestedRemedy

IS:
If at any point during the classification sequence the PSE allows the voltage at the PI to enter the VReset range as defined in Table 33–4a, the PSE shall classify the PD as Class 0.

SHOULD BE:
The Type 2 Physical Layer PSE shall complete Physical Layer classification and transisiton to the POWER-ON state without allowing voltage at the PI to go below Mark Event Voltage (VMark). If at any point prior to POWER-ON, the PI voltage drops below VMark, the classification is invalid. Subseqent behavior is undefined.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Change text to:
The Type 2 PSE that uses T2PL class should complete Physical Layer classification and transisiton to the POWER-ON state without allowing voltage at the PI to go below Mark Event Voltage (VMarkmin). If at any point prior to POWER-ON, the PI voltage drops below VMark, the PSE shall consider the classification invalid. Subseqent behavior is undefined and is implementation specific.

Undefined or class 0?

See 194, 103

Cl **33** *SC* **2.7.2a** *P* **19** *L* **23** # 103

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **X** *33.2.7*

Draft D0.9:

If PSEs PI voltage enters to Reset range prior to powerup then PD may lost its indication data

SuggestedRemedy

To add the following text after line 23:
"1. PSE shall maintain 7V minimum across the PI after classification phase is done until startup phase. If port voltage falls below 7V after classification phase is ended and PSE is starting up, the PSE may classify the PD as class 0."

Proposed Response *Response Status* **W**

see 132, 194

Cl **33** *SC* **2.7.2a** *P* **19** *L* **25** # 134

Stanford, Clay — Linear Technology

Comment Type **T** *Comment Status* **X** *33.2.7*

.af treated any PDs that classed with too much current (>51mA, ie. >class 4) as class 0.

Should .at treat such PDs as class 0 or class 4?

Today, the draft treats them as class 0. I would suggest they be treated as class 4.

Corrected text as follows:

SuggestedRemedy

IS:
If any measured IClass is equal to or greater than IClass_LIM min as defined in Table 33–4a, the PSE shall classify the PD as Class 0.

SHOULD BE:
If any measured IClass is equal to or greater than IClass_LIM min as defined in Table 33–4a, the PSE shall classify the PD as Class 4.

Proposed Response *Response Status* **W**

see 166

Cl **33** *SC* **2.7.2a** *P* **19** *L* **35** # 166

Law, David — 3Com

Comment Type **T** *Comment Status* **X** *33.2.7*

Make it clear what classification a PD should have from a single class even that returns Class 4. The text currently says it should be treated as a Type 1 PD, but doesn't say of what class. I believe the PD should be classified as Class 0.

SuggestedRemedy

Suggest that the text 'In this case, the Type 2 PSE shall assume it is powering a Type 1 PD until successful link layer classification is performed.' be changed to read 'In this case, the Type 2 PSE shall classify the PD as Class 1'. (CE NOTE: should this be class 0?)

Proposed Response *Response Status* **W**

the text 'In this case, the Type 2 PSE shall assume it is powering a Type 1 PD until successful link layer classification is performed.' be changed to read 'In this case, the Type 2 PSE shall classify the PD as Class 0'.
see 134

Cl **33** *SC* **2.7.2a** *P* **19** *L* **35** # 201

Schindler, Fred — Cisco Systems

Comment Type **TR** *Comment Status* **D** *33.2.7*

A PSE can legally detect and power on a PD without classifying a PD. This allowance should continue.

SuggestedRemedy

Replace the sentence at line-34 with:
If classification is not performed or the result of the first classification event is class 4, …

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **33** *SC* **2.7.2a** *P* **19** *L* **40** # 181

Schindler, Fred — Cisco Systems

Comment Type **TR** *Comment Status* **X** *33.2.7*

A PD should be able to ask for the power it requires.

Three independent classification mechanisms exist: type 1 and 2 Physical layer and type 2 Data Link Layer. Interoperability is ensured when a PD requests power from a PSE that can interpret the request. A type 2 PD can use type 1 Physical layer classification to request power.

SuggestedRemedy

Replace the sentence on line 40 with,
If the result of the first classification is any classes 0, 1, 2, 3, the PSE may omit the subsequent mark …

Proposed Response *Response Status* **O**

Cl **33** *SC* **2.9** *P* **29** *L* **20** # 242

Diab, Wael — Broadcom

Comment Type **T** *Comment Status* **X** *33.2.7*

This is not accurate as it does not include the Data Link Classification.

SuggestedRemedy

Please rewrite the following sentence to either one of these:

"Where a PSE does not provide either of the Physical Layer classification functions specified in 33.2.7, all PDs are treated as Class 0 Type 1
PDs."

TO

"Where a PSE does not provide the classification function specified in 33.2.7, all PDs are treated as Class 0 Type 1 PDs."

OR

"Where a PSE does not provide either of the Physical Layer or Data Link Layer classification functions specified in 33.2.7, all PDs are treated as Class 0 Type 1 PDs."

Proposed Response *Response Status* **O**

Cl **33** *SC* **3.1.a** *P* **34** *L* **13** # 97

Darshan, Yair — Microsemi Corporation

Comment Type **T** *Comment Status* **D** *33.2.7*

The current text may cause wrong interpretations.

The problem with the current text is the wording "..the PD will appear to the PSE as Type 1 PD until..."
Instead saying that the PD will consume up to type 1 power max power level (it is type 2 PD due to its class 4 signature)

Rational:
If a Type 2 PSE implements only type 1 layer 1 classification and it reads class 4 which is type 2 PD only, it should appear to the PSE as class 4 PD which is type 2 PD that have the potential to require up to 29.5W however it will consume up to 12.95W until layer 2 is established.

SuggestedRemedy

Change from:
"Table 33-12 specifies the electrical characteristics of Type 1 and Type 2 PDs. When a PSE exhibiting only Type 1 Physical Layer classification powers a Type 2 PD, the PD will appear to the PSE as a Type 1 PD until the PSE successfully performs Data Link Layer classification thereby identifying itself as a Type 2 PSE."

To:
"Table 33-12 specifies the electrical characteristics of Type 1 and Type 2 PDs. When a PSE exhibiting only Type 1 Physical Layer classification powers a Type 2 PD, the PD will consume max. type 1 power levels until the PSE successfully performs Data Link Layer classification thereby identifying itself as a Type 2 PSE"

Proposed Response *Response Status* **W**

PROPOSED REJECT.

This is the PD section. From the PD point of view it has only discovered a Type 1 PSE.

Cl **33** *SC* **3.4** *P* **38** *L* **1** # 51

Patoka, Martin — TI

Comment Type **ER** *Comment Status* **X** *33.2.7*

The presence of LL classification is harder to understand with the transfer of the requirement to 33.6.

SuggestedRemedy

Change title of 33.3.4 to: PD classifications.

Add sentence to line 5:

A type 2 PD that receives a type 1 physical layer classification, or partial type 2 physical layer classification shall behave as a type 0 PD.

Add paragraph at line 6 similar to:

A type 2 PD must respond to type 2 data link layer classification messsages as defined in section 33.6.

Proposed Response *Response Status* **W**

see Law 170
see 238, 237

Cl **33** *SC* **3.4** *P* **38** *L* **1** # 237

Diab, Wael — Broadcom

Comment Type **ER** *Comment Status* **X** *33.2.7*

This is analogous to my comment on th PSE section.

This section is very confusing. We dive into Physical Layer classification and then do Data-Link Layer Classification. I would suggest that we make 33.3.4 a general introduction to classification. We then take 33.3.4 and 33.3.4a and make them subclauses of this new geenral section.

For the content of the general section on classification, I will submit a seperate comment (my previous comment in the .csv file).

SuggestedRemedy

I would suggest that we make 33.3.4 a general introduction to classification. We then take 33.3.4 and 33.3.4a and make them subclauses of this new geenral section.

Proposed Response *Response Status* **W**

See Law 170
see 51, 238

Cl **33** *SC* **3.4** *P* **38** *L* **1** # 238

Diab, Wael — Broadcom

Comment Type **ER** *Comment Status* **X** *33.2.7*

Related to my previous comment on restructuiring this section, I would suggest the following text

SuggestedRemedy

Rename title of section 33.3.4 to PD Classifications

AND

insert the following text in the general section:

"A PD may be classified by the PSE based on Physical Layer classification information, Data Link classification or a combination of both provided
by the PD. The method of classification will depend on the Type of the PD and the Type of the PSE.

Type 1 PDs shall implement a Physical Layer classification as described below.

Type 2 PDs shall implement both a Physical Layer classification and a Data Link Classification as described below"

AND

Retain and restructure current text per my previous comment into sub-clauses

Proposed Response *Response Status* **W**

Add note in PD section to see new Class section in 33.2.7. Use suggested text to help craft new section.

See Law 170.

Cl **33** *SC* **3.4.2** *P* **39** *L* **14** # 147

Law, David — 3Com

Comment Type **T** *Comment Status* **X** *33.2.7*

There are actually two types of classification. [1] A PSE's classification of a PD. [2] A PD's classification of the PSE. The text seems to call all this PD hardware classification and while it is that mechanism that is used by the PD to classify the PSE I think we need to make that distinction clear in the text. Does the text 'Once a PD has been powered by a Type 2 PSE' imply that the PD has to detect that the current sourced by the PSE has exceeded the maximum for a Type 1 PSE - although even that doesn't guarantee it is Type 2 PSE power. The only real test that is available is that a Type 2 hardware classification or link layer classification has completed.

SuggestedRemedy

Perfom the following change: [a] Delete the first sentence of the third paragraph of subclause 33.3.4.2. Text currently reads 'Until successful Type 2 hardware classification or link layer classification has completed, a Type 2 PD's PSE Type state variable is set to Type 1.'. [b] Delete subclause 33.3.4.2.2. [c] Insert new subclause 33.3.4a, renumber as necessary. The content of this new subclause should cover the areas in [a] and [b] as well as clarify the text.

33.3.4a PSE type classifiction

A Type 2 PD shall classify the PSE Type as either Type 1 or Type 2. The default value of PSE Type shall be Type 1. After a successful Type 2 hardware classification or link layer classification has completed the PSE Type shall be set to Type 2. The PD shall reset the PSE Type to Type 1 when the voltage at the PI is less than or equal to VReset_lo max. Once a Type 2 hardware classification or link layer classification has completed a Type 2 PD shall reset the PSE Type to Type 1 if the voltage at the PI is less than or equal to VReset_hi min.

Proposed Response *Response Status* **O**

Cl **33** *SC* **6.4.1** *P* **65** *L* **14** # 145

Law, David 3Com

Comment Type **TR** *Comment Status* **X** *33.2.7*

Subclause 33.2.7.2a Type 2 hardware classification permits a Type 2 PSE to perform a single classification if it supports link layer classification. It however then requires that a PD that is classified as Class 4 is treated as a Type 1 PD until link layer classification is performed. I assume the link layer classification is then allowed to increase the power up to the Type 2 PD levels.

Based on the above, if a communications failure causes the PSE to revert to the initial hardware classification, in this case a PD that has increase its power through link layer classification it would have its power allocation cut back in the PSE to the Type 1 maximum. Since the PD may have no idea this is happening it may continue to draw the additional power it though it still had allocated - this in turn could cause the PSE to shut off the PD since it is now exceeding its 'requested' power.

SuggestedRemedy

Change the text so that in event of loss of communications the allocated power will remain at whatever level the last link layer classification was.

Proposed Response *Response Status* **O**

Cl **33** *SC* **Table 33-3** *P* **18** *L* **11** # 244

Diab, Wael Broadcom

Comment Type **TR** *Comment Status* **X** *33.2.7*

Please either delete the table in its entirety or modify the right hand most column

SuggestedRemedy

Either delete the entire table

OR

change the title of the right hand column to read "Power Ranges Available at output of PSE" and modify each row accordingly:

0 ... 0 - 15.4W
1 ... 0 - 4.0W
2 ... 4.0 - 7.0W
3 ... 7.0 - 15.4W
4 ... Type 1...Assign to Class 0
4 ... Type 2...0 - 36W

Proposed Response *Response Status* **W**

see 9, 163