Cl **00** *SC* *P* *L* # 142

Thompson, Geoffrey — Nortel

Comment Type **ER** *Comment Status* **A**

D3.1 comment 97
I feel that the response to Mr Landry is inappropriate.
Since the TF/CRG could not come to a consensus for a recommended response, the comment should not be rejected. Rather, both sides of the proposal and the TF/CRG vote should be presented to the balloting group and the decision should be made by them without bias.

SuggestedRemedy

Present both both sides of the proposal and the TF/CRG vote to the balloting group for the decision to be made by them.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

D3.1 comment 97 has been accepted and is no longer an unsat.

Accepting this comment will make no changes to the draft.

The Comment Resolution Group (CRG) could not come to consensus on whether or not to accept your proposal. It is therefore recirculated with no recommendation. That being the case, the default kicks in, the proposed change is not accepted and the current text stands unless there is further action from the balloting group.

Here is the original D3.1 comment and suggested remedy:

Comment:
There really isn't a need for both IMin1 and IMin2, as the key values can be combined into a single parameter.

Suggested Remedy:
Replace IMin1 and IMin2 with a new parameter, IMin, 5mA min, 10 mA max.

Replace the first 3 sentences of the section with the following:
A PSE shall consider the DC MPS component to be present if IPort is greater than or equal to IMin max for a minimum of TMPS. A PSE shall consider the DC MPS component to be absent if IPort is less than or equal to IMin min. A PSE may consider the DC MPS component to be either present or absent if IPort is in the range of IMin.

Cl **00** *SC* **0** *P* **0** *L* **0** # 1

LANDRY, MATTHEW — SILICON LABS

Comment Type **E** *Comment Status* **A** *ez*

Some of the figures in the CMP document are improperly stricken with red lines.

SuggestedRemedy

The editor should be more careful when composing the CMP document.

Response *Response Status* **C**

ACCEPT.

Cl **00** *SC* **0** *P* **1** *L* **1** # 113

Dawe, Piers — Avago Technologies

Comment Type **E** *Comment Status* **A**

Don't use 'TM' in page headers, we don't want them on every page

SuggestedRemedy

Also p17, don't 'TM' the second mention of 802.1AB

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Practice is to use one on the first appearance.

Editor to remove TMs from header.

Also, don't 'TM' the second mention of 802.1AB

Cl **00** *SC* **0** *P* **1** *L* **56** # 114

Dawe, Piers — Avago Technologies

Comment Type **E** *Comment Status* **A**

A bug has crept into the Frame template: page numbers are too low, won't print on some printers, and 2 lines lower than in published 802.3.

SuggestedRemedy

Remove (at least) one line-feed in each of left and right page footers

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Editor to attempt to fix. If unable, editorial staff will catch this error at publication.

Cl **00** *SC* **00** *P* *L* # 146

Thompson, Geoffrey Nortel

Comment Type **TR** *Comment Status* **A**

D3.1 comment 16
The response to Mr Claseman is insufficient and inaccurate.
a) The "group" referred to in the response is presumably the TF/CRG, NOT the balloting group which is the Working Group.
b) There is no vote of "the group" cited regarding the response given to actually provide evidence of "the feeling of the group".
c) There was no technical rationale nor reference to approved documentation for the project to support the rejection.
Therefore, I am "piling on" to his comment.

SuggestedRemedy

Either:
Provide an appropriate technical rationale for the TF/CRG "recommendation" that Mr Claseman's comment be rejected along with a documented vote of the TF/CRG

-OR-
Accept his comment.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See comment 55 for resolution of the 4P comments.

Accepting this comment results in no change to the text.

This comment (D3.1 comment 16) was a comment against D3.0 that the Comment Editor inadvertently left out (actually part of a group of comments). These were carried forward into D3.1 and reviewed to ensure the commenters concerns were addressed. This comment was similar to other comments in D3.0, all of which were resolved as OBE by D3.0 comment 72. The text in the response to D3.1 comment 16 is the exact text used to close the comments in D3.0.

Perhaps it was poorly worded but the agreement in the room was that the comment resolution group agreed by voice to reject the comment as the concept was that a 4P system is twice a 2P system and the 2P standard is not yet complete. The D3.0 commenter agreed that we reject his comment and he respond as unsatisfied so it would carry forward. If D3.1 comment 16 would have been in D3.0, it would have been closed as 'REJECT OBE 72'. This is what was done in effect, except the text from D3.0 comment 72 was brought over to D3.1 comment 16 so that the reader would not have to refer back to older comments. There was one other 4P comment in D3.1, it was a straight reject with no reason (again, at the agreement of the commenter to carry it forward) so D3.1 comment 16 could point to this other 4P comment as it would give the commenter no background on why it was rejected.

Based on the number of comments this go around, the 2P standard STILL isn't done and 4P comments will likely be rejected again and carried forward.

Cl **00** *SC* **00** *P* *L* # 31195

Thompson, Geoff Nortel

Comment Type **TR** *Comment Status* **R**

PD equipment that is covered in the Code of Conduct on Energy Consumption of Broadband Equipment (from the EUROPEAN COMMISSION DIRECTORATE-GENERAL, JOINT RESEARCH CENTRE, Institute for the Environment and Sustainability, Renewable Energies Unit) will need to stay within the bounds of Type 1 power limits.

SuggestedRemedy

Remove all specifications for Type 2 devices and reformulate the standard to only support devices which meet the EC Code of Conduct on Energy Consumption of Broadband Equipment.

Response *Response Status* **U**

REJECT.

Although some Ethernet equipment is covered under the Code of Conduct on Energy Consumption of Broadband Equipment, it is by no means comprehensive and many types of Ethernet equipment fall outside of the scope of that specific Code of Conduct. For example, equipment covered by the Code of Conduct on Data Centres, published by the same body is not expected to be covered by the Broadband Code of Conduct.

Furthermore, if the commenter examines the Code of Conduct on Energy Consumption of Broadband Equipment he will find that power delivered by the PSE is specifically excluded by section A.5 ("Power delivered to other equipment (e.g. over USB or PoE) shall not be included in power consumption assessment").

Lastly, the Code of Conduct on Energy Consumption of Broadband Equipment specifies ONU equipment that exceeds 12.95W (e.g. 10Gb/s point-to-point or point-to-multipoint interfaces). It may be expected that some implementations of such devices will include power supplied over Ethernet from the home gateway device to the optical interface at the demarcation point. As such, this is a prime application of PoE that helps justify the broad market potential for the project.

Cl **00** *SC* **00** *P* *L* # 31016

Claseman, George Micrel

Comment Type **TR** *Comment Status* **R**

4P operation is not described. If this is not specifed in 802.3at, an industry standard or proprietary scheme could emerge displacing this amendment. It is undesirable to make another revision on PoE (PoE ++) to repair this.

SuggestedRemedy

Send this back to the TF to complete the work on 4P. This has impact on the PSE, PD, management and L2 power management. Let's do it right this time.

Response *Response Status* **U**

REJECT.

This is a comment against D3.0 that was correctly submitted but mistakenly left out of the comment DB. This is how we handled the 4P comments in D3.0:

REJECT.
The group feels that finishing 2P is the priority and 4P will be address after that time, since the concept is that 4P = 2 x 2P.

Cl **01** *SC* **1.4** *P* **17** *L* **24** # 42

Jones, Chad Cisco

Comment Type **E** *Comment Status* **R**

"A PD that advertises a power draw less than or equal to 12.95 W"
significant digits have been fixed at 3. 12.95 should be changed to 13.0.

SuggestedRemedy

Change to "A PD that advertises a power draw less than or equal to 13.0 W"

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

OBE 110

Cl **01** *SC* **1.4** *P* **17** *L* **24** # 110

Vetteth, Anoop Cisco

Comment Type **TR** *Comment Status* **A**

A type 2 PD may draw more than 13 W and then move to a lower power value. It may advertise its new power need so that the PSE can reallocate power. Because of these steps a type 2 PD has just met the definition of a Type 1 PD.

SuggestedRemedy

Replace definition of Type 1 PD with:
"A PD that does not provide class-4 signature during physical layer classification."

Replace definition of Type 2 PD with:
"A PD that provide class-4 signature during physical layer classification."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace definition of Type 1 PD with:
"A PD that does not provide class 4 signature during physical layer classification."

Replace definition of Type 2 PD with:
"A PD that provides class 4 signature during physical layer classification."

Cl **01** *SC* **1.4** *P* **17** *L* **29** # 43

Jones, Chad Cisco

Comment Type **E** *Comment Status* **R**

"A PD that advertises a power draw greater than 12.95 W"
significant digits have been fixed at 3. 12.95 should be changed to 13.0.

SuggestedRemedy

Change to "A PD that advertises a power draw greater than 13.0 W"

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

OBE 110

Cl **25** *SC* **25.4.4a** *P* **18** *L* **26** # 115

Dawe, Piers — Avago Technologies

Comment Type **T** *Comment Status* **A** *EZ*

A 'Type 2 device' won't make any sense to a reader of Clause 25, where there is no 'Type 2'. 'Device' is too vague for a 'shall' requirement.

SuggestedRemedy

Change 'Type 2 device' to 'Type 2 Endpoint PSE or Type 2 PD (see Clause 33)'.

Response *Response Status* **C**

ACCEPT.

Cl **25** *SC* **25.4.4a.1** *P* **19** *L* **15** # 112

Vetteth, Anoop — Cisco

Comment Type **TR** *Comment Status* **A**

The measurement steps need to be improved in order to reject noncompliant systems. The diagram shown should be improved to be more representative of what will be seen.

SuggestedRemedy

See avetteth_BLW.pdf for the details. The key changes are:
-Focus on the front of the droop because it has the most voltage excursion.
- Use relative measurements.
- Improve the figure.
Normally MLT3 signals exist around 0 V. A BLW event shifts the DC bias. The shift is towards 0 V but may stop short of 0 V.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This changes the method of measurement only.

Editor to incorporate changes found in avetteth_BLW.pdf.

Change C>10uF to C>=100uF

add a note, Note: the value of the 100ohm termination resistor can be adjusted to compensate for the test circuit resistance. The test circuit resistance should exceed 2k ohms.

Cl **25** *SC* **25.4.4a.1** *P* **19** *L* **17** # 2

LANDRY, MATTHEW — SILICON LABS

Comment Type **E** *Comment Status* **A** *EZ*

The grammar could be improved a bit for this paragraph.

SuggestedRemedy

FROM:
While transmitting the Data Dependent Jitter (DDJ) packet of TP-PMD A.2, using the fixture shown in Figure 25-1, the equivalent system time constant, t, shall be greater than 2.4µs when calculated using measurement points A and B as defined in Figure 25-1. Point B is the point of maximum baseline wander droop. Point A is the point 150µs earlier in time from Point B. These measurements are to be made for the transmitter pair and observing the differential signal output at the MDI with no intervening cable.

TO:
While transmitting the Data Dependent Jitter (DDJ) packet of TP-PMD A.2, using the fixture shown in Figure 25-1, the equivalent system time constant, t, shall be greater than 2.4µs when calculated using measurement points A and B.

Point B is the point of maximum baseline wander droop. Point A is the point 150µs earlier in time from Point B. These measurements are to be made for the transmitter pair and observed on the differential signal output at the MDI with no intervening cable.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
Use this correction on the recommendation made in 112. OBE by 112

Cl **25** *SC* **25.4.4a.1** *P* **19** *L* **20** # 117

Dawe, Piers — Avago Technologies

Comment Type **T** *Comment Status* **A** *EZ*

You seem to be requiring a measurement across 160/2.4 = 67 time constants. Tiny errors at B will destroy any confidence in the result

SuggestedRemedy

Need two points much nearer together in time?

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
OBE 112

Cl **25** SC **25.4.4a.1** P **19** L **27** # 119

Dawe, Piers — Avago Technologies

Comment Type **TR** *Comment Status* **R**

This is not a standard for test equipment. You are defining an 'equivalent system time constant' which you should do precisely, without 1% (or is it 2%)? ambiguity and slop. It's up to the test equipment manufacturers and customers how accurately they want to measure this, or anything else, and whether they use instruments that won't give false positives, or false negatives, or will give their best estimate.

SuggestedRemedy

Remove the '+/- 1 %' from Figure 25-1.

Response *Response Status* **U**

REJECT.

I see the same approach taken in other clauses. ex/ section 7.4.1.5 DC Common Mode Output Voltage

Piers Dawe reply to the rejection:

Yes, other clauses did it in the past. Doesn't mean we should do it again.

Cl **25** SC **25.4.4a.1** P **19** L **27** # 116

Dawe, Piers — Avago Technologies

Comment Type **T** *Comment Status* **A** *EZ*

Need to explain what I_BIAS is in the context of 25.4.4a.1 (following the 'or' at line 13, can't rely on TP-PMD if it is defined there)

SuggestedRemedy

Define I_BIAS as used in Figure 25-1

Response *Response Status* **C**

ACCEPT.

Instruct the Editor to use their descretion to add the following text to the end of 25.4.4a.1.

"Ibias is the current Iunb/2 defined in clause 33."

Cl **25** SC **25.4.4a.1** P **19** L **27** # 118

Dawe, Piers — Avago Technologies

Comment Type **T** *Comment Status* **A**

Unless there is something special about MLT-3 and the choice of I_BIAS, the upper envelope at B won't be nearly zero. Or are you defining a voltage scale such that upper envelope at B is defined as zero?

SuggestedRemedy

Please clarify.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
OBE 112

The DDJ used for this test reduces the upper enevlop to a value close to 0.

Cl **25** SC **25.4.4a.1** P **19** L **29** # 62

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **A**

Draft D3.2
The 100 ohm termination is isolated by 10uF minimum capacitor.
Did anybody check that at the low frequency of the envelope (150us ==> <10KHz) it doesnt affect the measurements due to the fact that the effective termination is Xc+R?

SuggestedRemedy

Transformer and channel ad hoc to check that Xc<<R at f<=1/150us

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Obe 112

Cl **25** *SC* **25.4.4a.1** *P* **19** *L* **35** # 4

LANDRY, MATTHEW SILICON LABS

Comment Type **T** *Comment Status* **A** *EZ*

The equation relating V(t) and Vx is not precisely correct. It applies only to the baseline wander droop time constant. Nor does it apply after the DDJ packet ceases, and the DC level returns to normal.

SuggestedRemedy

Change "1.0" scale annotation to say, "V(t)/Vx = 1.0" to make it clearer this is a normalization point.

Use a bracket to show that the V(t)=Vxexp(-t/tau) equation applies to the decay period only.

Response *Response Status* **C**

ACCEPT.

Start with 112 then adapt new concepts to provide the extra guidance from this comment.

Cl **25** *SC* **25.4.4a.1** *P* **19** *L* **35** # 61

Darshan, Yair Microsemi Corporation

Comment Type **TR** *Comment Status* **A**

Draft D3.2
V(t) and Vx are not defined clearly.
Please define V(t) and Vx and specify their location to be used later for measurement and compliance tests purposes.

SuggestedRemedy

Define V(t) and Vx and specify their location to be used later for measurement and compliance tests purposes.

Please explain how to access V(t)/Vx for measuring the above?

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

OBE by 112 and 4.

V(t) is shown on the MDI in the figure. The value of Vx can be infered from where it is shown to be 1 in the figure. This comment may already be address by the improvements made by 4.

Cl **25** *SC* **25.4.4a.1** *P* **19** *L* **39** # 60

Darshan, Yair Microsemi Corporation

Comment Type **TR** *Comment Status* **A** *EZ*

Draft D3.2
The MLT-3 upper envelope in figure 25-1 is aligned to the X axis at point B which means that point B is always zero which is not true.

SuggestedRemedy

Change the drawing to show that point B may be any value above zero but is lower than point A.

Response *Response Status* **C**

ACCEPT.

OBE 112

Cl **25** *SC* **25.4.4a.1** *P* **19** *L* **40** # 3

LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **A** *EZ*

The variable, T, in the equation is italicized. The time period graphically indicated between A and B, T, is not italicized.

SuggestedRemedy

Italicize the "T."

Response *Response Status* **C**

ACCEPT.

Cl **25** *SC* **25.4.4a.1** *P* **19** *L* **41** # 5

LANDRY, MATTHEW SILICON LABS

Comment Type **T** *Comment Status* **R**

The equation for calulating tau based on the the A and B points could be improved. It is not clear that VA and VB are the voltages at times A and B.

SuggestedRemedy

FROM:
tau = -T / ln(VA/VB)

TO:
tau = -T / ln(V(A)/V(B))

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

This should be discussed. Both methods seem to be ok.

Cl **30** *SC* **30.2.5** *P* **24** *L* **1** # 85

Vetteth, Anoop Cisco

Comment Type **E** *Comment Status* **A** *ez*

Why is the word "conditional" used to describe only PD DLL Power Classification Package and not the PSE DLL Power Classification Package

SuggestedRemedy

Be consistent

Response *Response Status* **C**

ACCEPT.

Clarify the text so the word conditional is used for both packages

Cl **30** *SC* **30.2.5** *P* **25** *L* **36** # 84

sastry, ramesh Cisco Systems

Comment Type **T** *Comment Status* **R**

There is MIB variable to store the Model Number for PD and there is none for PSE.

SuggestedRemedy

Add the following (Page 25)

aPSEModel Number ATTRIBUTE GET (PSE DLL Power Classification Package)

Page- 29 Line 30

30.9.1.1.23 aPSEModel Number

ATTRIBUTE

APPROPRIATE SYNTAX
Resource Info
BEHAVIOUR DEFINED AS:

The value of aPSEModel Number is assigned so as to uniquely identify a model of PD produced by the implementor. The vaue of this field is assigned by the implementor using a concatenation of the implementor's OUI and a sequence of printable strings of the implementor's choosing. While the selection of printable strings are left to the implementor, these strings shall ensure that the string sequence is unique to the PD type from the implementor.

Response *Response Status* **C**

REJECT.

He is asking for a new variable to store a PSE unique model number. it is a new feature that the group should discuss

This is judged to be a new feature:

vote to add new feature.

y:5, n:2, A:12
no consensus to add new feature.

Cl **30** *SC* **30.9.2.1.14** *P* **33** *L* **17** # 120

Dawe, Piers — Avago Technologies

Comment Type **T** *Comment Status* **A**

'0x' notation is not used in Clause 30. See 30.8.1.1.8 for an example.

SuggestedRemedy

Change '0xFFFF' to 'the hexadecimal value FFFF' (or maybe 'the hexadecimal value FF-FF')

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change '0xFFFF' to 'the hexadecimal value FFFF'

Cl **30A** *SC* **30A** *P* *L* # 145

Thompson, Geoffrey — Nortel

Comment Type **ER** *Comment Status* **R** *30A*

Throughout Annex 30A
The leaf registration values for each attribute, action etc. have not been filled in (as is normal for this stage of balloting).

The document should not progress to Sponsor Ballot without these values being filled in.

SuggestedRemedy

Fill in the attribute registration values with values that are appropriately unique across 802.3 and conform to 802.3 conventions for such values. This should be done during preparation of the draft for Initial Sponsor Ballot (but not before).

Response *Response Status* **U**

REJECT.

802.3 Working Group has created a PAR to create a new standard (802.3.1) consolidating management and to separate Clause 30A and 30B from 802.3. The material removed from 802.3 is to be incorporated into the new standard. The maintenance task force has voted to take over changes to what has been contained in Clause 30A and 30B and have them handled by 802.3.1. Until such time as the WG plan of record changes, P802.3at will not update Clause 30A and 30B.

Therefore this comment is being rejected.

SME response:

PROPOSED ACCEPT IN PRINCIPLE.

This needs to be done as part of the changes to go to SB

Cl **30A** *SC* **30A** *P* *L* # 143

Thompson, Geoffrey — Nortel

Comment Type **ER** *Comment Status* **R** *30A*

Throughout Annex 30A
None of the links for the Annex 30A text that was provided to the Seoul meeting have been updated to provide the specific pointer (with embedded link) to the attribute syntax (i.e. the argument term for "WITH ATTRIBUTE SYNTAX") nor the operator type (i.e. the argument term for "MATCHES FOR")

Without the repair of these deficiencies, the draft is not complete.

I will attempt to provide individual comments for each problem that I find before the comment deadline. This comment is being entered to cover the problem in general and for any that I may miss.

SuggestedRemedy

Provide the specific pointer (with embedded link) for each instance of "WITH ATTRIBUTE SYNTAX" that is labled "....Where?"

Provide the specific operator type for each instance of "MATCHES FOR" that is labled "WHAT?" and/or any appropriate modification

Response *Response Status* **U**

REJECT.

802.3 Working Group has created a PAR to create a new standard (802.3.1) consolidating management and to separate Clause 30A and 30B from 802.3. The material removed from 802.3 is to be incorporated into the new standard. The maintenance task force has voted to take over changes to what has been contained in Clause 30A and 30B and have them handled by 802.3.1. Until such time as the WG plan of record changes, P802.3at will not update Clause 30A and 30B.

Therefore this comment is being rejected.

SME response:

PROPOSED ACCEPT IN PRINCIPLE.

We welcome the specific editorial changes from the commenter and appreciate his help

Cl **30A** *SC* **30A.16.1** *P* **131** *L* **46** # 144

Thompson, Geoffrey — Nortel

Comment Type **ER** *Comment Status* **A** *ez*

Lines 46 through 52
Missing commas as separators after each "GET"

SuggestedRemedy

Insert missing commas as separators after each "GET" (5 instances)

Response *Response Status* **C**

ACCEPT.

Cl **30A** *SC* **30A.16.2** *P* **135** *L* **10** # 7

LANDRY, MATTHEW — SILICON LABS

Comment Type **T** *Comment Status* **R** *30A*

The MATCHES FOR field for all of these additions is incomplete. The value is currently listed as "WHAT?" which is clearly incorrect.

SuggestedRemedy

Seek the advice of someone who knows what this field means.

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

PROPOSED ACCEPT IN PRINCIPLE.

Refer comment 143

Cl **30A** *SC* **30A.16.2** *P* **135** *L* **13** # 6

LANDRY, MATTHEW — SILICON LABS

Comment Type **T** *Comment Status* **R** *30A*

The REGISTERED AS field for all of these additions is incomplete. The final qualifier, e.g., dLLPowerType (nnn), should have a proper number in place of (nnn).

SuggestedRemedy

Seek the advice of someone who knows what those numbers mean and how they are assigned.

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

PROPOSED ACCEPT IN PRINCIPLE.

Refer comment 145

Cl **30A** *SC* **30A.16.2** *P* **135** *L* **30** # 12

LANDRY, MATTHEW — SILICON LABS

Comment Type **T** *Comment Status* **R** *30A*

The WITH ATTRIBUTE SYNTAX field for all of these additions is incomplete. The value is currently listed as "IEEE802Dot3-MgmtAttributeModule.Where?" which is clearly incorrect.

SuggestedRemedy

Seek the advice of someone who knows what this field means.

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

PROPOSED ACCEPT IN PRINCIPLE.

Refer comment 143

Cl **30A** *SC* **30A.16.2** *P* **135** *L* **9** # 8

LANDRY, MATTHEW SILICON LABS

Comment Type **T** *Comment Status* **R** *30A*

The WITH ATTRIBUTE SYNTAX field for all of these additions is incomplete. The value is currently listed as "IEEE802Dot3-MgmtAttributeModel.Where?" which is clearly incorrect.

SuggestedRemedy

Seek the advice of someone who knows what this field means.

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

PROPOSED ACCEPT IN PRINCIPLE.

Refer comment 143

Cl **30A** *SC* **30A.23.1** *P* **142** *L* **38** # 9

LANDRY, MATTHEW SILICON LABS

Comment Type **T** *Comment Status* **R** *30A*

The REGISTERED AS field for all of these additions is incomplete. The final qualifier, e.g., pDDllPowerClassificationPkg(nn), should have a proper number in place of (nn).

SuggestedRemedy

Seek the advice of someone who knows what those numbers mean and how they are assigned.

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

PROPOSED ACCEPT IN PRINCIPLE.

Refer comment 143

Cl **30A** *SC* **30A.23.2** *P* **143** *L* **22** # 10

LANDRY, MATTHEW SILICON LABS

Comment Type **T** *Comment Status* **R** *30A*

The REGISTERED AS field for all of these additions is incomplete. The final qualifier, e.g., pDID(nn), should have a proper number in place of (nn).

SuggestedRemedy

Seek the advice of someone who knows what those numbers mean and how they are assigned.

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

PROPOSED ACCEPT IN PRINCIPLE.

Refer to comment 145

Cl **30A** *SC* **30A.23.2** *P* **143** *L* **31** # 11

LANDRY, MATTHEW SILICON LABS

Comment Type **T** *Comment Status* **R** *30A*

The MATCHES FOR field for all of these additions is incomplete. The value is currently listed as "WHAT?" which is clearly incorrect.

SuggestedRemedy

Seek the advice of someone who knows what this field means.

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

PROPOSED ACCEPT IN PRINCIPLE.

Refer to comment 143

Cl **30B** *SC* **30B.1** *P* **147** *L* **13** # 139

Thompson, Geoffrey — Nortel

Comment Type **E** *Comment Status* **A** *ez*

One too many colons in "PDPoweredFrom:::= ENUMERATED..."

SuggestedRemedy

Change to: "PDPoweredFrom::= ENUMERATED..."

Response *Response Status* **C**

ACCEPT.

Cl **30B** *SC* **30B.1** *P* **147** *L* **18** # 140

Thompson, Geoffrey — Nortel

Comment Type **E** *Comment Status* **A** *ez*

Missing comma
Change: "(5)"

SuggestedRemedy

To: "(5),"

Response *Response Status* **C**

ACCEPT.

Cl **30B** *SC* **30B.1** *P* **147** *L* **25** # 141

Thompson, Geoffrey — Nortel

Comment Type **E** *Comment Status* **A** *ez*

Extra comma
Change: "(2),"

SuggestedRemedy

To: "(2)"

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.1** *P* **35** *L* **33** # 121

Dawe, Piers — Avago Technologies

Comment Type **TR** *Comment Status* **A**

In 802.3 'multipoint' applies to PONs: a topology with one head end directional power splitter(s) and multiple outstations. Not the shared medium of coax Ethernet where the medium runs past the intermediate stations. What do you mean here? Is there a twisted pair cabling scenario where one MDI is connected to more than one MDI? If so, is it really 'multipoint' (directional) as above?
I raised this issue in D3.0 comment 374 'First, is 'multipoint' the right word?' but this point was not answered.

SuggestedRemedy

Not knowing what you mean I can't provide a full remedy. Don't use the word 'multipoint'. Maybe you should talk about 'shared medium'.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change the text: "The detection and powering algorithms are likely to be compromised by cabling that is not point-to-point,…"

Cl **33** *SC* **33.1.1** *P* **35** *L* **48** # 122

Dawe, Piers — Avago Technologies

Comment Type **T** *Comment Status* **A**

Don't call MDIs of other clauses 'existing'. Future readers will not know or care which clauses were written first. These MDIs could be newly manufactured.

SuggestedRemedy

Delete 'existing'.

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.1.1** *P* **35** *L* **48** # 39

Jones, Chad — Cisco

Comment Type **E** *Comment Status* **A** *ez*

"1000BASE-T without modification.Type 1 operation adds"
missing space after period.

SuggestedRemedy

change to: "1000BASE-T without modification. Type 1 operation adds"

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.1.3** *P* **37** *L* **8** # 123

Dawe, Piers — Avago Technologies

Comment Type **TR** *Comment Status* **R**

Fig 33-3 shows a PSE in a Midspan capable of applying power to a medium. There is a PI on the right, and an interface without a name on the left, the medium continues to a PHY with no PD (which you should not apply power to). By comparison, Fig 33-6 shows two arrangements which power the right hand side but not the left. The medium is not continuous through the Midspan. D3.0 comment 380 raised this problem before.

SuggestedRemedy

Correct Fig 33-3. Show some arrangement to break the continuity within the Midspan. Could also show a PHY with PD on the left.

Response *Response Status* **U**

REJECT.

The reply to D3.0 comment 380 still applies "A midspan doesn't have a PHY, therefore it doesn't have an MDI. This is our best effort to
illustrate a midspan. Commentor is welcome to submit his own drawing"

The comment hints at a possible lack of understand of the concept of a midspan. This is a device that applies power to a PD that sits in between a non-PoE switch and a PD. The drawing shows the PI on the right which can be thought of as the output of the midspan. This is where you connect the PD and the only place where the midspan would ever apply power (hence the label PI). The unnamed connection to the left is to the legacy non-PoE switch. The midspan will not apply power to this portion of link segment (not if it wants to be compliant).

Piers Dawe reply to the rejection:
If the PHY on the left in this Figure 33-3 is a non-powered PHY you shouldn't connect it to the PI through the Midspan, which is what you show even though you say "The midspan will not apply power to this portion of link segment (not if it wants to be compliant).".
All you need to do is add some indication of a break in the medium within the midspan, to the left of the PSE.

Cl **33** *SC* **33.1.4** *P* **37** *L* **26** # 133

Dawe, Piers — Avago Technologies

Comment Type **TR** *Comment Status* **A**

Still confused as to what I_Cable is. Per D3.0 comment 391 'is that per cable (bundled) as it says, or per conductor, or per MDI (two conductors each way)?
ACCEPT IN PRINCIPLE. Add footnote: Icable is the maximum output current per PI in normal powering mode.'
but this draft says 'DC current per pair' and 'when all cable pairs are energized at ICable' implying it is per pair, not per PI or per conductor. Maybe it's not really 'per' pair, as one pair carries the DC current out and the other carries it back?

SuggestedRemedy

If it isn't the current per cable, don't call it I_Cable! Change its name to I_pair (or I_PI?). Change 'per pair' to 'on a pair'.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Good catch. Icable appears in Table 33-1 without any introduction.

The current can't be called I_PI as the overall current out of the PI is 0.

Add a sentence or two to the end of the paragraph under 33.1.4 or after Table 33-1 defining Icable:

"Icable is the current on one twisted pair in the multi-twisted pair cable. Two twisted pairs are required to source Icable, one carrying +Icable and one carrying -Icable from the perspective of the PI."

See also 29, which pulls another sentence to this section. Resolve together.
Also 124

Cl **33** *SC* **33.1.4** *P* **37** *L* **39** # 13

LANDRY, MATTHEW — SILICON LABS

Comment Type **T** *Comment Status* **A**

The significant digits for DC current per pair are improperly set at 2.

SuggestedRemedy

Instead of 0.35 and 0.60, use 0.350 and 0.600.

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.1.4.1** *P* **37** *L* **48** # 124

Dawe, Piers — Avago Technologies

Comment Type **T** *Comment Status* **A**

For Type 2, Table says
'Channel maximum DC pair loop resistance 12.5 ohm',
while text says
'channel DC loop resistance shall be 25 ohm or less...
cable references use "DC loop resistance" while this clause uses "DC pair loop resistance," resulting in a factor of two reduction of RCh.'

SuggestedRemedy

Don't have two competing definitions of Rch! Either use their quantity with their definition, or choose your own quantity.
Decide which of 'Channel DC pair loop resistance', 'channel DC loop resistance', or 'DC pair loop resistance' you are using, and use it consistently. It would be kind to the reader to explain why the factor of two arises; is it because a pair contains two conductors, you have schemes that use two pairs, or what?

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

We are choosing our own quantity and we are using it. The problem is that we have to reference the cable standards to ensure readers understand what types of cable are allowed under this standard. The cable standards use loop resistance of one cable in the pair.
Our standard is written from the perspective of one pair, not one wire.

To help make clearer, change the end of the first sentence on page 38, L2:

FROM: "It should be noted that the cable references use “DC loop resistance” while this clause uses “DC pair loop resistance,” resulting in a factor of two reduction of RCh. RCh is the net result of the loop resistance of a single
twisted pair."

TO: "It should be noted that the cable references use “DC loop resistance” which refers to a single conductor. This clause uses “DC pair loop resistance” which refers to a pair of conductors in parallel. Therefore, Rch is related to but not equivalent to the "DC loop resistance" called out in the cable references."

Also, see 29 and 133. resolve together.

Cl **33** *SC* **33.1.4.1** *P* **38** *L* **1** # 29

Schindler, Fred — Cisco

Comment Type **E** *Comment Status* **A** *ez*

This useful note is applicable to Type 1 and Type 2 cabling.

SuggestedRemedy

Move this sentence to the bottom of section 33.1.4.

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.1.4.2** *P* **37** *L* **48** # 63

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **A**

Draft D3.2
1. The title is wrong.
It is channel requirement and not cable requirement.
2. In lines 17-18: Rmax and Rmin are the sum of conductors resistance and not only the cable conductor

SuggestedRemedy

1. Change the title from:
"Type 2 cabling requirement"

to
"Type 2 Channel requirement"

2. In both lines 17-18:
Change "...the resistance of conductor..." to "...the resistance of the sum of conductors..."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Multiple comments in one comment:

1. Page 38, l12, change cabling to channel

Cl **33** *SC* **33.1.4.2** *P* **38** *L* **18** # 125

Dawe, Piers — Avago Technologies

Comment Type **T** *Comment Status* **A**

Is this the usual definition of unbalance or mismatch?

SuggestedRemedy

I would have expected 2 x (Rmax-Rmin)/(Rmax+Rmin) x 100 %.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This is the definition (no factor of 2) that has been used since 802.3af. CE is not aware of a missing factor of 2 and was able to derive the equation for mismatch without the factor of 2.

Accepting the comment results in no change to the document.

Cl **33** *SC* **33.1.4.2** *P* **38** *L* **23** # 111

Vetteth, Anoop — Cisco

Comment Type **TR** *Comment Status* **A**

This specification and ISO deal with a channel unbalance. The definitions of Rmax and Rmin are for a cable only. They are the same value at this point. The correct definition includes this model contain 4 connections,10 m of jumper cables and 90 m of horizontal cabling.

SuggestedRemedy

Resolution:
Correct the definitions of Rmax and Rmin, by replacing "conductor" with "channel conductor".

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace "conductor" with "channel conductor" in two spots.

Cl **33** *SC* **33.2.11.1.2** *P* **68** *L* **1** # 31097

LANDRY, MATTHEW — SILICON LABS

Comment Type **TR** *Comment Status* **A**

There really isn't a need for both IMin1 and IMin2, as the key values can be combined into a single parameter.

SuggestedRemedy

Replace IMin1 and IMin2 with a new parameter, IMin, 5mA min, 10 mA max.

Replace the first 3 sentences of the section with the following:
A PSE shall consider the DC MPS component to be present if IPort is greater than or equal to IMin max for a minimum of TMPS. A PSE shall consider the DC MPS component to be absent if IPort is less than or equal to IMin min. A PSE may consider the DC MPS component to be either present or absent if IPort is in the range of IMin.

Response *Response Status* **C**

ACCEPT.

This is an effort to make the specification read better, which we appreciate. However, we could not come to concensus on a solution and the current specificaiton is not broken. Therefore we reject the comment.

Cl **33** *SC* **33.2.11.1.2** *P* **68** *L* **5** # 47

Darshan, Yair — Microsemi Corporation

Comment Type **ER** *Comment Status* **R**

Draft D3.2 Table 33-12 item 3b.

According to IEC 60950-1:2001, SELV operation is 60VDC and not 60Vpeak.
See EN60950 page B59 clause 2.2.2.

SuggestedRemedy

Option 1: Change item 3b "unit" in Table 33-12 from Vp to Vdc or
Option 2: Change item 3b "unit" in Table 33-12 from Vp to V and add "The DC value" to the "additional information" column of item 3b.

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

Add to additional information: "the maximum voltage of AC+DC+ripple"

Cl **33** *SC* **33.2.3** *P* **43** *L* **50** # 55

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **R** *4p*

Draft 3.2

The standard should not preclude implementations that are using both alternative A and B due to the following reasons:

a) It is out of scope of the standard to limit implementations that meets standard requirements.
b) There are no interoperability issues if PD gets power from 2x 2 pairs power source if all pairs are comming from the same port/segment/PSE type 2. It is the load responsibility (PD) to meet the 2P specification for each 2P.
(4P ad hoc recomendations)

SuggestedRemedy

Change from:

"A PSE shall implement Alternative A or Alternative B, or both.
While a PSE may be capable of both Alternative A and Alternative B, PSEs shall not operate both Alternative A and Alternative B on the same link segment simultaneously".

To:
"A PSE shall implement Alternative A or Alternative B, or both.
While a PSE may be capable of both Alternative A and Alternative B, PSEs shall not deliver power on both Alternative A and Alternative B simultaneously on the same segment If Alternative A and Alternative B are operated from different link segments or different power systems or from Type 1 PSE.
For Type 2 PSEs, simultaneous operation of Alternative A and Alternative B on the same link segment is out of scope of the standard."

In addition, in 33.3.1 page 50 line 42 modify the text to be:
"NOTE-PDs that implement only Mode A or Mode B are specifically not allowed by this standard. PDs that may simultaneously receive power from both Mode A and Mode B are out of scope of this standard."

Response *Response Status* **C**

REJECT.

Vote: does 4P have broad market potential?

Y: 1 N: 14 A: 8

Even though the 4P ad-hoc has demonstrated technical feasability for 4P systems, it is the consensus of the CRG that this solution does not have broad market potential. Based on this, the CRG has agreed not to specify this mode of operation.

Cl **33** *SC* **33.2.3** *P* **44** *L* **50** # 31034

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **R**

Draft 3.1

The standard should not preclude implementations that are using both alternative A and B due to the following reasons:

a) It is out of scope of the standard to limit implementations that meets standard requirements.
b) There are no interoperability issues if PD gets power from 2x 2 pairs power source if all pairs are comming from the same port/segment/PSE type 2. It is the load responsibility (PD) to meet the 2P specification for each 2P.
(4P ad hoc recomendations)

SuggestedRemedy

Change from:

"A PSE shall implement Alternative A or Alternative B, or both.
While a PSE may be capable of both Alternative A and Alternative B, PSEs shall not operate both Alternative A and Alternative B on the same link segment simultaneously".

To:
"A PSE shall implement Alternative A or Alternative B, or both.
While a PSE may be capable of both Alternative A and Alternative B, PSEs shall not deliver power on both Alternative A and Alternative B simultaneously on the same segment If Alternative A and Alternative B are operated from different link segments or different power systems or from Type 1 PSE.
For Type 2 PSEs, simultaneous operation of Alternative A and Alternative B on the same link segment is out of scope of the standard."

In addition, in 33.3.1 page 50 line 42 modify the text to be:
"NOTE-PDs that implement only Mode A or Mode B are specifically not allowed by this standard. PDs that may simultaneously receive power from both Mode A and Mode B are out of scope of this standard."

Response *Response Status* **U**

REJECT.

See comment 31016

Cl **33** *SC* **33.2.4.3** *P* **44** *L* **48** # 48

Darshan, Yair Microsemi Corporation

Comment Type **ER** *Comment Status* **A**

Draft D3.2
The term startup is actually the state POWER_UP in the state diagram.
There is no need to use two different terms (POWER_UP in the state diagram and startup in the text) that has actually the same meaning. Scan the draft and replace all "startup" occurrences with POWER_UP".

SuggestedRemedy

Scan the draft and replace all "startup" occurrences with POWER_UP".

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.4.4** *P* **45** *L* **20** # 30

Schindler, Fred Cisco

Comment Type **E** *Comment Status* **A**

Remove words that are normally used for people.

SuggestedRemedy

Replace "This variable is provided to support PSEs whose power up operation monitors the PI voltage output and who use this value to indicate the completion of PD inrush."

With
"This variable is provided for PSEs that monitor the PI voltage output and use this variable to indicate the completion of PD inrush during power up operation."

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.4.4** *P* **45** *L* **20** # 68

Darshan, Yair Microsemi Corporation

Comment Type **TR** *Comment Status* **A**

Draft D3.2
The text describing legacy_powerup variable is not technically accurate.

The issues are:
1. the text "It has been shown that using only this PI voltage information may be insufficient to determine the true end of PD inrush" is not true. we nevr shown that.
1.1 It is true that in some implementations it will not be sufficient to measure only PI information BUT it is technically possible and 100% implemtation issue.
1.2 It is also true that relaying on Tinrush_done is a good worst case implementation

SuggestedRemedy

Replace the current text:
"It has been shown that using only this PI voltage information may be insufficient to determine the true end of PD inrush; use of a fixed TInrush period is recommended.

With the following:
"Using only this PI voltage information may be insufficient to determine the true end of PD inrush; use of a fixed TInrush period is recommended."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

I believe the group has shown scenarios that can break solutions that use PI voltage information.

"Using only this PI voltage information is insufficient to determine the true end of PD inrush; use of a fixed TInrush period is recommended."

Cl **33** *SC* **33.2.4.4** *P* **45** *L* **9** # 49

Darshan, Yair — Microsemi Corporation

Comment Type **ER** *Comment Status* **R**

Draft D3.2
It is not clear if current_limiting is refering to POWER_UP state or POWER_ON state.
In both states PSE may be in current limit.

SuggestedRemedy

Replace the text from:
"current_limiting
A variable indicating that the PSE is in current limit.
Values: TRUE: The PSE is limiting the current provided to the PD.
FALSE: The PSE is not limiting the current to the PD."

To
"current_limiting
A variable indicating that the PSE is in current limit.
Values: TRUE: The PSE is limiting the current provided to the PD.
FALSE: The PSE is not limiting the current to the PD.
Note: PSE may be in current limit during POWER_UP or POWER_ON."

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

The state diagram 33-9 only tests current_limiting when moving from POWER_UP to POWER_ON. Therefore, the variable is not considered for the POWER_ON case.

Cl **33** *SC* **33.2.4.4** *P* **53** *L* **49** # 14

LANDRY, MATTHEW — SILICON LABS

Comment Type **E** *Comment Status* **A** *EZ*

The "pse_skips_event2" variable is not in alphabetical order.

SuggestedRemedy

Move "pse_skips_event2" to be after "pse_reset."

Response *Response Status* **C**

ACCEPT.

This is on page 46.

Cl **33** *SC* **33.2.4.5** *P* **47** *L* **45** # 16

LANDRY, MATTHEW — SILICON LABS

Comment Type **E** *Comment Status* **A** *EZ*

tinrush_timer, tme1_timer, and tme2_timer are out of alphabetical order.

SuggestedRemedy

Rearrage them so they list of timers is alphabetical.

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.4.6** *P* **57** *L* **24** # 70

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **A**

Draft D3.2
do_overload_detect function is not implicitly addressing Tovld.
We need to make it explicit to cover Tovld requirements in Table 33-11

In addition, part of the text in the Value=TRUE is redundant.

SuggestedRemedy

Change from:
"do_overload_detect
This function monitors the PSE output current and detects an overload condition for at least 5% of a one second sliding time. This function return a variable:

ovld_detected:
Output of the do_overload_detect function.
Values: TRUE: The PSE has detected an overload condition for at least 5% of a one second sliding time.
FALSE: The PSE has not detected a qualified overload condition."

To:
"do_overload_detect
This function monitors the PSE output current and detects an overload condition for at least 5% of a one second sliding time, Tovld as defined in Table 33-1. This function return a variable:

ovld_detected:
Output of the do_overload_detect function.
Values: TRUE: The PSE has detected an overload condition.
FALSE: The PSE has not detected a qualified overload condition."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This is page 49.

change to:
"do_overload_detect
This function monitors the PSE output current and detects an overload condition for at least Tovld of a one second sliding time. This function returns a variable:

ovld_detected:
Output of the do_overload_detect function.
Values: TRUE: The PSE has detected an overload condition.
FALSE: The PSE has not detected a qualified overload condition."

Cl **33** *SC* **33.2.4.7** *P* **50** *L* **1** # 100

Vetteth, Anoop — Cisco

Comment Type **TR** *Comment Status* **A**

The PSE state diagram does not tell you when type-2 current limits are employed for the scenario where a Type-2 PSE uses 1-Event classification to power-up a Type-2 PD and then uses DLL for mutual identification. A Type-2 PSE that uses 1-Event classification should be able to power-up a Type-2 PD using Type-1 current limits and then switch to Type-2 current limits when mutual identification is completed. Similarly as per the present state diagram, the PSE that skips second finger of 2-Event classification needs to set Type-2 current limits to a Class-4 PD as soon as classification is completed (Done in TYPE2_CLASS_DONE state). This is not the intended behavior as per the text.

SuggestedRemedy

See proposed remedy in avetteth_PSE_Current_Limit.pdf

Response *Response Status* **C**

ACCEPT.

This change permits the following:

1) Type 2 PSE powering type 2 PD: MAY set type-2 current limts after inrush is completed if it does 1 event classification

2) Type 2 PSE powering type 2 PD: MAY set type-1 current limts until mutual identification is completed.

3) Type 2 PSE powering type 2 PD: SHALL set type-2 current limits if mutual identification is completed

4) Type 2 PSE powering type 2 PD: SHALL set type-2 current limts right after inrush is completed if it does 2 event classification

5) Type 2 PSE powering type 1 PD: MAY set type-2 current limts after inrush is completed

Cl **33** *SC* **33.2.4.7** *P* **50** *L* **1** # 15

LANDRY, MATTHEW SILICON LABS

Comment Type **T** *Comment Status* **A**

Now that the entrance to TEST_MODE is on open arrow, there are two unintended consequences.

First, it is no longer necessary to use "mr_pse_enable != force_power" as a qualifier, because if that expression were not true (i.e., mr_pse_enable DOES equal force_power), the entry to TEST_MODE would be forced to occur.

Second, however, once an entrance into TEST_MODE occurs, the transition to TEST_ERROR cannot function. Because the "mr_pse_enable = force_power" expression is always a forced entry to TEST_MODE, the open arrow will always be asserted.

SuggestedRemedy

Eliminate test mode, because it is of questionable universal value and easily left in the domain of leaving it to the implementor.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

mr_pse_enable has three values (disable, enable, force_power) and test mode is only entered when the variable is force_power. Priort to D3.2, TEST_MODE was entered from IDLE (where port power is off).

The TEST_ERROR has two exit paths:
1) The port is on and has a current fault
2) Variable mr_pse_enable is not forced_power

A problem occurs when path one is taken. That condition also permits entry into state TEST_MODE. i.e., entry for state TEST_MODE and TEST_ERROR is valid.

To keep TEST_MODE,

1) Modify the entry to TEST_MODE:
(mr_pse_enable = force_power)*(!error_condition + !tlim_timer_done + ovld_detect)

Now TEST_MODE can only be entered when the port does not have a fault. This change permits legacy (TEST_MODE entry from IDLE) and new behavior (TEST_MODE entry from POWER_ON) and blocks TEST_MODE entry during a port fault.

Cl **33** *SC* **33.2.4.7** *P* **50** *L* **37** # 86

Vetteth, Anoop Cisco

Comment Type **E** *Comment Status* **A**

Transition condition from POWER_UP state to ERROR_DELAY state is missing a a bracket.

SuggestedRemedy

Correct this

tinrush_timer_done * (legacy_powerup + current_limiting)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

OBE 67

Cl **33** *SC* **33.2.4.7** *P* **50** *L* **37** # 95

Vetteth, Anoop Cisco

Comment Type **T** *Comment Status* **A**

The transition from POWER_ON state to POWER_DENIED state (depicted by "D") is missing:
* !option_vport_lim

SuggestedRemedy

Complete the transition condition

Response *Response Status* **C**

ACCEPT.

This matches the construct used.

The group should discuss why the conditions are placed on a PSE that can not power the port. That is, power is denied whether the conditions are true or false.

Cl **33** *SC* **33.2.4.7** *P* **50** *L* **40** # 99

Vetteth, Anoop Cisco

Comment Type **TR** *Comment Status* **A**

I believe that the transition condition from POWER_UP state to POWER_ON state should be the following:

[(power_applied * legacy_powerup * tinrush_timer_not_done) + (tinrush_timer_done * !current_limiting)] * tpon_timer_not_done

Currently topn_timer_done is associated with only legacy power-up

SuggestedRemedy

Check this and correct it

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.4.7** *P* **50** *L* **45** # 67

Darshan, Yair Microsemi Corporation

Comment Type **TR** *Comment Status* **A**

Draft D3.2 Figure 33-9.
There is an error at the exit from POWER_UP to ERROR_DELAY.
current_limiting is set in the following cases:
a) any current limit value which will be decided by th eimplementor
b) when the current limit is actually the Inrush current

this exit is set whenever the PSE port is in current limiting_which causing to be always in EROR_DELAY...

SuggestedRemedy

Change from:
tinrush_timer_done*legacy_powerup + current_limiting

To:
tinrush_timer_done*legacy_powerup + tinrush_timer_done*(Iport >= Iinrush) + current_limiting
---
(now implementor can select current limit threshold to differentiate between POWER_UP (Inrush) current limit and POWER_ON current limit and also support legacy implementations.)

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change from:
tinrush_timer_done*legacy_powerup + current_limiting

To:
tinrush_timer_done*(legacy_powerup + (Iport >= Iinrush) + current_limiting)

(now implementor can select current limit threshold to differentiate between POWER_UP (Inrush) current limit and POWER_ON current limit and also support legacy implementations.)

Cl **33** *SC* **33.2.4.7** *P* **51** *L* **13** # 96

Vetteth, Anoop Cisco

Comment Type **T** *Comment Status* **A** *EZ*

Variable temp_var is not defined

SuggestedRemedy

Define temp_var in Section 33.2.4.4

A temporary variable used to store the value of the state variable mr_pd_class_detected.

Response *Response Status* **C**

ACCEPT.

Editor to use their discretion when fixing this.

Cl **33** *SC* **33.2.4.7** *P* **51** *L* **19** # 97

Vetteth, Anoop Cisco

Comment Type **T** *Comment Status* **A** *EZ*

do_classification_2 is not defined

SuggestedRemedy

Change it to do_classification

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.4.7** *P* **52** *L* **10** # 87

Vetteth, Anoop Cisco

Comment Type **E** *Comment Status* **A**

The transition from MONITOR_OVLD to itself is not required

SuggestedRemedy

Remove this transition

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.4.7** *P* **52** *L* **13** # 59

Darshan, Yair Microsemi Corporation

Comment Type **TR** *Comment Status* **R**

Draft D3.2 state machine

Figure 33-11 ILIM state machine is not allowing integrating TLIM due to the fact that when TLIM timer stops it also resets the counter this may lead to system failure when Vport steady state is 57V, ILIM is close to (0.4/0.35)*Icable in a way that during Iport=ILIM Vport>=50V for 49msec and than Iport=Icable for 1msec (example) in this case the energy level is summed until thermal breakdown.
Accumulative TLIM as done in TOVLD will solve this problem.

SuggestedRemedy

Two modifications:
1. Page 47 clause 33.2.4.5 lines 35-36:
Change from:
"All timers operate in the manner described in 14.2.3.2 with the following addition. A timer is reset and stops counting upon entering a state where "stop x_timer" is asserted"

To:
"All timers operate in the manner described in 14.2.3.2 with the following addition. A timer is reset and stops counting upon entering a state where "stop x_timer" is asserted unless otherwise specified.

2. On page 48 line 8 TLIM Timer:
Add the following text:
TLIM timer may accumulate TLIM value by not resetting counting upon entering a state where "stop x_timer" is asserted.

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

This is a real problem but no duty cycle limit has been specified for ILIM. This same issue was raised two drafts ago when other duty cycle issues were raised, but the correction slipped through the cracks.

1) Specify a period over which TLIM accumulated every time port current is limited.

Add sentence to 33.2.9.8 after sentence ". transients at the PI."

"The cumulative duration of TLIM may be measured with a sliding window of at least 1 second width."

2) Create function for 33.2.4.6

do_short_detection
This function monitors the PSE output current and detects a current limit condition for at least TLIM of a one second sliding time. This function returns a variable:

short_detected:
Output of the do_short_detection.
Values: TRUE: The PSE has detected a current limit condition for at least TLIM of a one second sliding time.
FALSE: The PSE has not detected a qualified current limit condition.

3) Modify Figure 33-11 MONITOR_SHORT, the state contains only do_short_detection. Remove the DETECT_SHORT state and conditions from that state, and the exit from MONITOR_SHORT.

Cl **33** *SC* **33.2.4.7** *P* **52** *L* **13** # 80

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **A**

Draft D3.2 state machine - Improved remedy for same comment that I have sent earlier

Figure 33-11 ILIM state machine is not allowing integrating TLIM due to the fact that when TLIM timer stops it also resets the counter this may lead to system failure when Vport steady state is 57V, ILIM is close to (0.4/0.35)*Icable in a way that during Iport=ILIM Vport>=50V for 49msec and than Iport=Icable for 1msec (example) in this case the energy level is summed until thermal breakdown.
Accumulative TLIM as done in TOVLD will solve this problem.

SuggestedRemedy

Two modifications:
1. Page 47 clause 33.2.4.5 lines 35-36:
Change from:
"All timers operate in the manner described in 14.2.3.2 with the following addition. A timer is reset and stops counting upon entering a state where "stop x_timer" is asserted"

To:
"All timers operate in the manner described in 14.2.3.2 with the following addition. A timer is reset and stops counting upon entering a state where "stop x_timer" is asserted unless otherwise specified.

2. On page 48 line 8 TLIM Timer:
Add the following text:
TLIM timer may accumulate TLIM value by not resetting counting when "stop x_timer" is asserted.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

This is a real problem but no duty cycle limit has been specified for ILIM. This same issue was raised two drafts ago when other duty cycle issues were raised, but the correction slipped through the cracks.

1) Specify a period over which TLIM accumulated every time port current is limited.

Add sentence to 33.2.9.8 after sentence ". transients at the PI."

"The cumulative duration of TLIM may be measured with a sliding window."

2) Create function for 33.2.4.6
do_short_detection
This function monitors the PSE output current and detects a current limit condition for TLIM within a sliding window. This function returns a variable:

short_detected:

Output of the do_short_detection.
Values: TRUE: The PSE has detected a current limit condition.
FALSE: The PSE has not detected a qualified current limit condition.

3) Modify Figure 33-11 MONITOR_SHORT, the state contains only do_short_detection. Remove the DETECT_SHORT state and conditions from that state, and the exit from MONITOR_SHORT.

Cl **33** *SC* **33.2.6.1** *P* **53** *L* **47** # 44

Heath, Jeff — Linear Technology

Comment Type **E** *Comment Status* **A** *EZ*

First paragraph of 33.2.6.1 is grammatically and technically correct but may be misinterpreted if not read in the presence of an English Major.

SuggestedRemedy

Text Is:
The detection voltage Vport shall be within the Vvalid voltage range at the PSE PI with a valid PD detection signature connected, as specified in Table 33-4 and Table 33-14, respectively.

Text Should Be:
The detection voltage Vport shall be within the Vvalid voltage range at the PSE PI (as specified in Table 33-4) with a valid PD detection signature connected (as specified in Table 33-14).

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.6.1** *P* **54** *L* **27** # 64

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **A** *EZ*

Draft D3.2
Cgood is 150nF

SuggestedRemedy

Change to 150nF or change units to "uF"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cgood was 150 nF. Either change it back to this or use 0.150 uF. Note that mks unit normally use power of 1000. I suggest that the 150 nF value is best.

Cl **33** *SC* **33.2.6.1** *P* **55** *L* **35** # 31017

Reshef, Tamir — Microsemi Corp

Comment Type **TR** *Comment Status* **A**

Vos and Ios are not well specified.
How do you measure it at the PD?

SuggestedRemedy

See the definitions for Ios and Vos as illustrated in Figure 33C-17 in draft d3.0 and generate new drawing that illustrate only the location and definition of Voffset and Ioffset.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

OBE 41

Cl **33** *SC* **33.2.8** *P* **55** *L* **53** # 91

Vetteth, Anoop — Cisco

Comment Type **ER** *Comment Status* **A**

The last paragraph on this page "The minimum ..... " is convoluted. It uses phrases like "less over-margined value"

SuggestedRemedy

Change last paragraph to:

The minimum power output by the PSE for a particular PD class is defined by Equation (33-2). Alternatively PSE implementations may use VPSE = VPort min and RChan = RCh max to arrive at over-margined PClass values as shown in Table 33-7.

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.8** *P* **56** *L* **5** # 71

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **A**

Draft D3.2
EQUATION 33-2:
There is an error in the term 2xRchanxPclass_PD.

SuggestedRemedy

Change to 4 x Rchan x Pclass_PD.

Response *Response Status* **C**

ACCEPT.

Good catch. Obviously, we forgot to add the factor of 2 back in when we made Rch the pair resistance.

Cl **33** *SC* **33.2.8** *P* **56** *L* **5** # 28

zoladz, diego MSCC

Comment Type **T** *Comment Status* **A**

Formula 33-2 has an error:
Into the square root appears a term = 2 x Rchan x Pclass_PD
The correct term should be : 4 x Rchan x Pclass_PD

SuggestedRemedy

replace with: 4 x Rchan x Pclass_PD

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

OBE 71

Not part of the ballot pool. TR changed to a T as a result.

Cl **33** *SC* **33.2.8** *P* **57** *L* **1** # 81

Feldman, Daniel Microsemi

Comment Type **ER** *Comment Status* **R**

Table 33-8 describes PSE and PD allowed permutations. But it is located in the PSE section. THis confuses the reader, with too much information, specially since a reader will tipically only be implementing a PSE or a PD.

SuggestedRemedy

Separate the table into two tables, one related to the PSE and located in section 33.2.8, and another related to the PD and loncated in section 33.3.5. References in section 33.3.5 to the table need also to be changed.

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

This makes the document more readable, but makes not technical change to the document. CE likes the suggestion but wonders of the wisdom of making a change this big at this stage in the process. Suggest voting on the change.

Cl **33** *SC* **33.2.8.1** *P* **57** *L* **45** # 92

Vetteth, Anoop Cisco

Comment Type **ER** *Comment Status* **R**

It dosent make sense to say that a Type 2 PSE will treat the PD as Type 2 PD but may provide Class 0 power

The same is repeated in 33.2.8.2 line 40-41

SuggestedRemedy

Strike
"will treat the PD as a Type 2 PD" in both places

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **33** *SC* **33.2.9** *P* **60** *L* **10** # 31

Schindler, Fred Cisco

Comment Type **E** *Comment Status* **R**

Some parameter units were changed to mks while other were not. ex/ A and mA

SuggestedRemedy

Be consistent.

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

The group should briefly discuss a recommendation.

To avoid decimal places use mks units that keep at least on digit to the left of the decimal place.

Cl **33** *SC* **33.2.9** *P* **61** *L* **16** # 31198

Thompson, Geoff Nortel

Comment Type **TR** *Comment Status* **R**

Also line 20
It makes no sense to require different voltage ranges for Type 1 vs. Type 2 PSE supplys except to the extent required to maintain far end voltage at the supplied (larger) current. That design freedom shuld be left to the implementor. See also next comment

SuggestedRemedy

Change item 1 Vmin from "50" to "37 + (Rch + Icable)"
Change item 2 Vmin from "50" to "37 + (Rch + Icable)"

Response *Response Status* **U**

REJECT.

Accepting the comment has the (perhaps) unintended effect of lowering the PD power to 22W.

Straw poll taken from room:
are you in favor to lowering the PD power to 22W
20 people opposed to lowering the power to 22W
zero people in favor of lowering the power to 22W

rationalization follows:

The remedy appears to have errors in it. I assume the proposer wants PSEs to provide a PSE voltage (lower than present values) that the PDs need, that is dependent on system parameters (cable length, cable quality, Ipd, PD type).

This would be very difficult to test. I suggest the task force vote to determine if they want to give the proposer time to correct their text, or reject this because these changes may significantly complicate this specification.

-------- Here is what I believe was intended ------

The proposed remedy adds a voltage to a resistance and a current. Assume the remedy should be:
Vmin = 37 + Rch * Icable

Here 37 is suppose to be the Vpd. The proposal would be incorrect for type 2 PDs.

Type 1 PD Vpd = 37

Type 2 PD Vpd = 50 - Rch * Icable

A minimum voltage could be calculated for a type 2 PD (Vpd = 50 - 12.5*0.6 = 42.5 V) and then the formula used could become:

Vmin = Vpd_min + Rch * Icable.

This formula is only valid during average power demand. Different values would result when PD Ipeak was drawn.
Type 1 PD Vpd = 44 - 0.4*20 = 36 V

Type 2 PD Vpd = 50 - 0.6*400/350*12.5 = 41.4 V

This gets more complicated when Ipeak changes and a quadratic formula needs to be used to calculate currents.

Cl **33** *SC* **33.2.9** *P* **61** *L* **16** # 31058

Anslow, Peter
Nortel Networks

Comment Type **TR** *Comment Status* **R**

Requiring 50 V minimum from a Type 2 PSE means that it cannot be operated from commonly available 48 V supplies. See Thompson comment #482

SuggestedRemedy

Change the following:
Table 33-11, Item 1 Vport min PSE Type 2 to 44 volts
Table 33-11, Item 2 min value, PSE Type 2 to 44 volts
Table 33-18, Item 1 Vport min PSE Type 2 "50" value to "44" becoming "44-(RCh×ICable)"
Table 33-18, Item 3 Voverload min PSE Type 2 "50" value to "44" becoming "44-(RCh×ICable×400/350)"

In addition, it makes no sense to have different voltage ranges for Type 1 vs. Type 2 PDs as each has to be able to operate with the both types of PSEs during start-up. In particular a Type 2 PSD has to operate at the low voltage of a Type 1 during start-up while establishing the Data Link Layer communication

Response *Response Status* **U**

REJECT.

See 198 for lack of support to lower the PD power. This proposal lowers the power even further than comment 198.

show of hands for people in favor of lowering power of the PD to slightly lower than 22W:
for: 0
against: 20

You are also missing a subtle point that when a type 2 is behaving as a type 1 at boot up, it has to operate over the type 1 range; therefore there are no difference in the operating ranges of a PD.

Additionally, the same resolution to D3.0 comment 482 applies.

During the May 2006 Interim, the IEEE 802.3at task force voted to adopt 50 V as the minimum Vport.
Y: 37 N:0 A: 1
This was done after extensive evaluation of the system tradeoffs. One result of the discussions was the revelation that battery back up systems have only supplied about 10% of their available power when the voltage has reach 44V, therefore a boost system would be required to best utilize the available power fomr the battery backup system. It was determined that boosting to 50V was no more of a burden than boosting to 44V.

Multual identification of the PSE and PD type is possible. A Type 2 PD may provide useful functionality on a legacy system or it may indicate that it is under powered.

A type 2 PD range fits within a type 1 PD operating voltage range. Therefore, a type 1 (legacy) PD can be powered by a type 2 PSE.

A PSE normally would not change its voltage range when it provides power to different PD types.

Cl **33** *SC* **33.2.9** *P* **61** *L* **16** # 149

Thompson, Geoffrey Nortel

Comment Type **TR** *Comment Status* **R**

D3.1 comment 198
The comment DOES NOT have the effect of lowing the maximum PD power to 22 watts. The group evidently either misunderstood the intention or wishes to miscommunicate about it.

The proposed change allows for a lower voltage to be used at lower power levels and relieves the spec from having to the highest current at the lowest voltage. Not all power levels have to be provided at all voltage levels. You would get to reduce the power from the max by reducing the voltage.

SuggestedRemedy

As requested in previous comment.

Response *Response Status* **U**

REJECT.

Vote on accepting the suggested remedy from D3.1 comment 198 which is:

Change item 1 Vmin from "44" to "37+(Rch*Icable)" [corrected typos]
Change item 2 Vmin from "50" to "37+(Rch*Icable)" [corrected typo]

Y: 0 N: 17 A: 5

CRG justification for rejection:

The group contends that lowering the port voltage lowers port power. Additionally, interoperability could be compromised by having compliant ports without the ability to provide 30W.

This is a new feature request. It may be a great feature but it is a big change to the text and is best left as a proprietary solution. It is the consensus of the CRG that we achieve all of our objectives without making this change.

SME response:
The task force interpreted the text differently than the subject matter expert.

The task force requested the proposer to resubmit a corrected remedy. This was not done.

See the text, in the original response, below the line "--- Here is what I believe was intended ---" for the subject mater expert interpretation.

Cl **33** *SC* **33.2.9** *P* **61** *L* **16** # 147

Thompson, Geoffrey Nortel

Comment Type **TR** *Comment Status* **R**

D3.1 comment 58
The response to Mr Anslow is inaccurate.
a) There is no reasonable rationale that all power levels have to be available at all voltages. That wouold require the PSE to be a voltage source rather than a current source which is an implementation matter and not proper for the standard to regulate.
b) Since the max current and power is beng lowered, there is no technical reason to mandate the higher voltage.

Therefore, I am "piling on" to his comment.

SuggestedRemedy

Allow a Vport min value down to as low as 44 volts in any situation in which the remaining operating requirements of the moment are being met.

Response *Response Status* **U**

REJECT.

Vote on accepting the suggested remedy.

Y: 1 N: 16 A: 7

CRG justification for rejection:

The group contends that lowering the port voltage lowers port power. Additionally, interoperability could be compromised by having compliant ports without the ability to provide 30W.

This is a new feature request. It may be a great feature but it is a big change to the text and is best left as a proprietary solution. It is the consensus of the CRG that we achieve all of our objectives without making this change.

SME response:
The interpretation of this comment appears different from the original proposer. The new comment reduces interoperability. Only some PDs will operate at the lower voltages and or lower power levels.

This appears to be a feature that is outside the scope of this standard.

Also see response to D3.1, 58.

Cl **33** *SC* **33.2.9** *P* **61** *L* **28** # 72

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **R**

Draft D3.2 Table 33-11:

IEEE802.3-2005 specified 3% unbalanced current.
The specification didnt adress if it is Ipeak or Iavg. Technically it should be Ipeak and not Icable.
There is no difference in the models we used to calculate the unbalance current for Type 1 and Type 2 systems; The only difference is Icable.
As a result, Iunb for Type 1 and Type 2 should be the same equation i.e.
Iunbalance=3%*Icable or Iunbalance=3%*Ipeak

SuggestedRemedy

Use the same equation for Iunbalance in Type 1 and Type 2.

Option 1 (recommended, supports legacy): 3%*Icable for Type 1 and Type 2

Option 2 (this is a worst case but is not required due to the fact that the same model were used for Type 1 and 2):
3%*Ipeak for Type 1 and Type 2

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

Option 2 is worst-case and should be used for Type-2. It could also be recommend for Type-1 but not required (legacy would be broken).

Option 3: Remove the ability for Type-2 PDs to draw ICUT for Tovld and have only one maximum power value. Then use Option 1.

Cl **33** *SC* **33.2.9** *P* **61** *L* **30** # 32

Schindler, Fred — Cisco

Comment Type **E** *Comment Status* **A** *EZ*

Typo sec should be s.

SuggestedRemedy

Typo sec should be s.

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.9.1** *P* **103** *L* **47** # 126

Dawe, Piers — Avago Technologies

Comment Type **TR** *Comment Status* **A** *EZ*

Never say 'shall be measured' unless you require that each and every part made shall be measured (and therefore, per ISO 9000, records kept proving it). If it's not a military, safety-specific or installation spec, that's probably expensive overkill.

SuggestedRemedy

Get rid of all 'shall be measured' from the draft. For example, change 'The specification for VPort in Table 33-11 shall include line and temperature variations. The voltage potential shall be measured between any conductor of one power pair and any conductor of the other power pair.'
to
'If measured between any conductor of one power pair and any conductor of the other power pair, the static output voltage VPort shall meet the requirement of Table 33-11 item 1. The definition of VPort includes line and temperature variations.'

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Assume this is page 61.

[comment editor note] added after meeting closed, provided by commenter during comment sign off:

Note there are six "shall be measured" to be changed.

Cl **33** *SC* **33.2.9.11** *P* **65** *L* **38** # 101

Vetteth, Anoop — Cisco

Comment Type **TR** *Comment Status* **A** *EZ*

Eq 33-2 takes precedence over Table 33-7

SuggestedRemedy

Change Table 33-7 to Eq 33-2

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.9.12** *P* **65** *L* **51** # 26

LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **A** *EZ*

"sublause" is still misspelled.

SuggestedRemedy

Delete the word altogether.

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.9.5** *P* **62** *L* **23** # 50

Darshan, Yair Microsemi Corporation

Comment Type **ER** *Comment Status* **A**

Draft D3.2
POWER_ON is a state.
"mode" is not defined anywere n the draft.

SuggestedRemedy

Scan the draft and replace "mode" with STATE whenever it is a state in the state machine.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Correct on page 62. Task editor to scan and replace "mode" with "state" where approriate.

Cl **33** *SC* **33.2.9.5** *P* **62** *L* **31** # 27

LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **A** *EZ*

"IPeak" is cut off on the left side of the equation.

SuggestedRemedy

Re-wrap the equation so it is visible in its entirety.

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.9.5** *P* **62** *L* **36** # 33

Schindler, Fred Cisco

Comment Type **E** *Comment Status* **A** *EZ*

Do not use people words for things.

SuggestedRemedy

Replace "RChan is the channel resistance, whose worst case value is RCh as defined in Table 33-1"

with

Replace " RChan is the channel loop resistance as defined in 33.1.4. This parameter has a worst-case value or Rch which is defined in Table 33-1"

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.9.5** *P* **62** *L* **44** # 34

Schindler, Fred Cisco

Comment Type **E** *Comment Status* **A**

Use better English.

SuggestedRemedy

Replace "truly" with "correctly."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

OBE 93.

Cl **33** *SC* **33.2.9.6** *P* **62** *L* **41** # 65

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **A**

Draft D3.2
The definition of what is startup mode (or POWER_UP mode per my previous comment regarding the identity between these two terms) is not technically accurate.
Startup mode or POWER_UP mode occurs between the PSE transition to POWER_UP state and the transition to POWER_ON state.
The Tinrush_done or the conclusion of PD inrush current are only the indicators that are used to set power_applied true and allow transition to POWER_ON

SuggestedRemedy

Replace the first line in 33.2.9.6 from:
"Startup mode occurs between the PSE transition to the POWER_UP state and the lesser of TInrush or the conclusion of PD inrush currents."

to:
"Startup mode (or POWER_UP mode) occurs between the PSE transition to the POWER_UP state and the transition to POWER_ON mode.
The indication for the conclusion of POWER_UP mode is the lesser of TInrush or the conclusion of PD inrush currents that may last less than Tinrush_min due to the fact that PDs may be implemented with lower efective capacitor value than Vport*Iinrush/Tinrush_min in their input and different startup implementations.
Note: PD efective input capacitor is the PD input capacitor during POWER_UP state and other system capacitors that are reflected to the PD input during POWER_UP state"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

OBE 93.

Most of this text explains why one implementation could monitor currents rather than use TInrush.

This related to 93 and 34.

Cl **33** *SC* **33.2.9.6** *P* **62** *L* **41** # 93

Vetteth, Anoop — Cisco

Comment Type **ER** *Comment Status* **A**

The first paragraph in this section is not clear and might not be correct based on the new definition of Iinrush that we adopted last time around

SuggestedRemedy

Change to:
Startup mode occurs between the PSE's transition to the POWER_UP state and; the expiration of TInrush or the conclusion of PD inrush currents. However, for practical implementations it is recommended that the startup mode persist for the complete duration of TInrush, since the PSE may not be able to truly ascertain the conclusion of a PD's inrush behavior.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Startup mode occurs between the PSE's transition to the POWER_UP state and either the expiration of TInrush or the conclusion of PD inrush currents.
However, for practical implementations it is recommended that the startup mode persist for the complete duration of TInrush, as the PSE may not be able
to correctly ascertain the conclusion of a PD's inrush behavior.

Cl **33** *SC* **33.2.9.6** *P* **62** *L* **43** # 66

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **A**

Draft D3.2
The intention of line 43 text is good but not clear enugh:
The text says:
"However, startup exists for the complete duration of TInrush as a practical matter, as the PSE may not truly ascertain the conclusion of a PDs inrush behavior."
The text contains few problems:
1. The text "However, startup exists for the complete duration of TInrush as a practical matter" can be understood that actually startup take full Tinrush which is not true.It is PD dependent (Capacitor value ,softsatrt implementation etc.).
2. The text "as the PSE may not truly ascertain the conclusion of a PDs inrush behavior." is an implementation issue. Some PSE implementation will sucessfuly detect the compltion of the inrush current and some not. So we need accurately to clarify why we reccomend to define POWER_UP ending by Tinrush_done.

Just for the record:
In the IEEE802.3af, Tinrush_min was chosen to be 50msec to account for the folowing energy need:
1. PSE is required to support 180uF with PSE current limiter set to 0.4A to 0.45A. The time required to charge this cap size is less than 30msec.
2. Due to the fact that PD DC/DC include output cap as well and its value is reflected to the input during startup (at some Vport_pd value), than the effective input capacitance is increase hence additional time is required to supply sufficient energy during startup resulting with at least 20msec time margin which is sumed up to 50msec.
This explains why it is better that PSE will be in POWER_UP for at least Tinrush_min.

SuggestedRemedy

Change:
"However, startup exists for the complete duration of TInrush as a practical matter, as the PSE may not truly ascertain the conclusion of a PDs inrush behavior."

To:
"However, startup may exists for the complete duration of TInrush as a practical matter, as the PSE may not truly ascertain the conclusion of a PDs inrush behavior due to the fact that the PSE may need to support the worst case POWER_UP energy required to charge PD input capacitor or other PD system capacitors that may prolonging the inrush current for at least Tinrush_min duration."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

OBE 93.

See 34, 65, and 93. This has different proposal for the same concern as 65. They are both from the same commentor.

Cl **33** *SC* **33.2.9.6** *P* **62** *L* **52** # 46

Darshan, Yair — Microsemi Corporation

Comment Type **E** *Comment Status* **R**

Items (d) and (e):
Ithe d): The 60mA value in item (d) should be a DC value due to the fact that it happens in a short time interval between 10 to 30V and crosses classification circuits that need to be stabilized within 5msec.

Item (e) is a low current value and also as good practice we care about the average current otherwise we will have to define ac current components and we dont need it..

SuggestedRemedy

Item d): Change to 60mAdc.
Item e): Change to 5mAdc.

Response *Response Status* **C**

REJECT.

Cl **33** *SC* **33.2.9.6** *P* **63** *L* **13** # 45

Darshan, Yair — Microsemi Corporation

Comment Type **E** *Comment Status* **A**

Draft D3.2

Figure 33-14:
Figure 33-14 needs some editing work to align the correct lables to the relevant dashed lines

SuggestedRemedy

1. Add lable "0.4A" to the dashed line below the "0.45A" line.
2. Move the text lable "Iinrush at Vport>30V" between the "0.4A" and the "0.45A lines"
See attached revised drawing Figure 33-14 in file "Figure 33-14 Iinrush current and timing limits in startup"

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove the dashed line below 0.45 A.

Add to item C above, "Iinrush shall not exceed the PSE inrush template in figure 33-14."

Cl **33** *SC* **33.2.9.7** *P* **63** *L* **43** # 69

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **R**

Draft D3.2
We need to synchronize the sliding window time text with the state machine text in "do_overload_detect" function.

SuggestedRemedy

Change from:
"The cumulative duration of Tovld is measured with a sliding window of at least 1 second width"

To:
"The cumulative duration of Tovld is measured with at least one second sliding time width."

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

Discuss but I believe the existing text is fine. The new text reorders the words in the original sentence.

Cl **33** *SC* **33.2.9.8** *P* **65** *L* **20** # 54

Darshan, Yair — Microsemi Corporation

Comment Type **T** *Comment Status* **R**

Draft D3.2

Add a drawing that explains the dependence between Voltage and current at the PSE PI durint POWER_ON state.
Figure 33-15 covers only current vs time templates.
See attached example in PDF file "Figure 33-15A PI operating Voltage vs Current".

SuggestedRemedy

Change text in line 20 from:
"If IPort exceeds the PSE lowerbound template, the PSE output voltage may drop below VPort min."

To:
"If IPort exceeds the PSE lowerbound template, the PSE output voltage may drop below VPort min. See figure 33-15a.

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

The proposal forces a design requirement. The existing text permits the behavior proposed.

Cl **33** *SC* **33.3.1** *P* **69** *L* **42** # 56

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **A**

Draft D3.2:

The note in line 42 precludes the ability to reduce power loss over the cable and increase overall system efficiency.
Rational:
Using a Type 2 PD that requires a total of 24W (example) on a 2P can also take a toatal of 24W over all 4 pairs with simple PD implementation.
In this case this PD can work on 2P PSE or on 2x2P PSEs with the same PD behaviour which is transparent to the user.

In addition let's assume that in this case both pairs are comming from the same box and the same power supply. This is a classical case in which by using all pairs we effectively reduce the channel power loss and allows interoperable and relaible operation.

If Icable meet the specification of 2P then I<Icable certaily meets the same specification so preventing feeding the current all over the 4 pairs doesnt make sense.

This is implementation that is inline with the global effort for reducing power loss and in my opinion we are not authrized to preclude implementations that meet the numbers and state machines of this standard.

SuggestedRemedy

Change from:
"NOTE-PDs that implement only Mode A or Mode B are specifically not allowed by this standard. PDs that simultaneously require power from both Mode A and Mode B are specifically not allowed by this standard."

To:
"NOTE-PDs that implement only Mode A or Mode B are specifically not allowed by this standard. PDs that simultaneously require power from both Mode A and Mode B are specifically not allowed by this standard.

PDs that simultaneously recieve power from both Mode A and Mode B are out of scope of the standard."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

According to the current text, PDs will accept power simultaneously from all four pairs.

Accepting the comment results in no change to the text.

Cl **33** *SC* **33.3.1** *P* **71** *L* **42** # 31035

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **R**

Draft D3.1:

The note in line 42 precludes the ability to reduce power loss over the cable and increase overall system efficiency.
Rational:
Using a Type 2 PD that requires a total of 24W (example) on a 2P can also take a toatal of 24W over all 4 pairs with simple PD implementation.
In this case this PD can work on 2P PSE or on 2x2P PSEs with the same PD behaviour which is transparent to the user.

In addition let's assume that in this case both pairs are comming from the same box and the same power supply. This is a classical case in which by using all pairs we effectively reduce the channel power loss and allows interoperable and relaible operation.

If Icable meet the specification of 2P then I<Icable certaily meets the same specification so preventing feeding the current all over the 4 pairs doesnt make sense.

This is implementation that is inline with the global effort for reducing power loss and in my opinion we are not authrized to preclude implementations that meet the numbers and state machines of this standard.

SuggestedRemedy

Change from:

"NOTE-PDs that implement only Mode A or Mode B are specifically not allowed by this standard. PDs that simultaneously require power from both Mode A and Mode B are specifically not allowed by this standard."

to:
"NOTE-PDs that implement only Mode A or Mode B are specifically not allowed by this standard. PDs that simultaneously may recieve power from both Mode A and Mode B is out of scope of the standard"

Response *Response Status* **U**

REJECT.
1) Comment is technically incorrect. This sentence does not preclude 24W over 4 pairs.
2) The rest of the comment glosses over a set of complex issues involving how the PSE would determine it was acceptable to power all four pairs.
3) The comment glosses over the special considerations needed in the PD to accommodate this new mode of operation.
4) The Task Force has specifically made it clear that 2 separate PDs per four pair cable must be accomodated.
5) Recommended solution does not address 2, 3, 4 and is not possible to implement in the context of a standard.

Cl **33** *SC* **33.3.2** *P* **70** *L* **1** # 37

Jones, Chad Cisco

Comment Type **E** *Comment Status* **A** *ez*

"Type 2 PDs implement both 2-Event Physical Layer classification and Data Link Layer classification"
I know we went through and removed all the links but it seems appropriate to point the reader to the classification sections the first time we mention it in the PD section.

SuggestedRemedy

Change to:
Type 2 PDs implement both 2-Event Physical Layer classification (see 33.3.5.2) and Data Link Layer classification (see 33.6).

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.3.2** *P* **70** *L* **5** # 38

Jones, Chad Cisco

Comment Type **T** *Comment Status* **R**

"A Type 2 PD that does not successfully observe a 2-Event Physical Layer classification or Data Link Layer classification must conform to Type 1 PD power restrictions"
Find the corresponding shall.
ran out of time to find the corresponding shall. Will withdraw if it already exists.

SuggestedRemedy

If no shall statement exists, make this normative.

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

Section 33.3.5.2 (P75 L29) provides for this requirement, however it is not wrong to strengthen 33.2.2.

"Until successful 2-Event Physical Layer classification or Data Link Layer classification has completed, a
Type 2 PD's pse_power_type state variable is set to 1. A Type 2 PD shall conform to the electrical requirements
as defined by Table 33-18 of the Type defined in its pse_power_type state variable."

Change the referenced paragraph to:

"A Type 2 PD that does not successfully observe a 2-Event Physical Layer classification or Data Link Layer classification shall conform to Type 1 PD power restrictions"

Cl **33** *SC* **33.3.3.3** *P* **71** *L* **18** # 17

LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **A**

present_det_sig is out of alphatical order

SuggestedRemedy

Swap present_det_sig with present_class_sig

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.3.3.3** *P* **71** *L* **34** # 22

LANDRY, MATTHEW SILICON LABS

Comment Type **TR** *Comment Status* **A**

The state variable, pse_dll_power_type is mapped from aMirroredDLLPowerType.

However, the values pse_dll_power_type are listed as Type 1 and Type 2, whereas the values for aMirroredDLLPowerType are derived from the "power type" field of the TLV, which is a two-bit binary value.

The concept of "mapping" however, is unclear to me.

If "mapping" implies 1-to-1 correspondence, then this relation between pse_dll_power_type and the "power type" TLV field is clearly broken.

If "mapping" can, however, also imply some logical transformation, it is obvious how to extract the needed pse_dll_power_type value from the "power type" TLV field.

SuggestedRemedy

[1] If the "mapping" concept allows intermediate unspecified transformation, nothing needs to be changed.

However, ff the "mapping" concept requires 1-to-1 correspondence, then

[2] pse_dll_power_type could have the following values:
2 (10b): Type 1 PSE
0 (00b): Type 2 PSE

Note that this is a bit confusing (2=Type 1, 0=Type 2), so a more intuitive alternative is

[3] rearrange the definition of the "power type" TLV field:
11b: Type 2 PD
10b: Type 2 PSE
01b: Type 1 PSE
00b: Type 1 PD

This way, the pse_dll_power_type will have the proper values mapped into it.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Resolve with solution found in 'comment #22.doc'

Cl **33** *SC* **33.3.3.5** *P* **72** *L* **1** # 88

Vetteth, Anoop Cisco

Comment Type **E** *Comment Status* **R**

This transition from DO_MARK_EVENT1 and DO_MARK_EVENT2 to IDLE is redundant since there is universal input to IDLE state when
Vport_PD < VReset

SuggestedRemedy

Delete this transition

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

These transitions reinforce the "out" expected when the mark current tells a .af PSE to return to idle state.

Cl **33** *SC* **33.3.3.5** *P* **72** *L* **10** # 98

Vetteth, Anoop Cisco

Comment Type **T** *Comment Status* **R**

the transition condition from IDLE state to DO_DETECTION is mdi_power_required. This condition is redundant since !mdi_power_required will ensure that you continued in state IDLE.

SuggestedRemedy

This transition condition should be:
Vport_pd >= VReset

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

mdi_power_required is necessary condition since DO_DETECTION applies present_det_sig = true. The PD may not desire power. The right term would be mdi_power_required * (Vport = Vvalid).

Cl **33** *SC* **33.3.3.5** *P* **72** *L* **17** # 18

LANDRY, MATTHEW SILICON LABS

Comment Type **TR** *Comment Status* **R**

Since the diagram only uses "VPort_PD < VMark_th" and "Vport_PD > VMark_th," it is not clear what happens when VPort_PD = VMark_th.

SuggestedRemedy

Universally replace "VPort_PD < VMark_th" with "VPort_PD <= VMark_th."

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

Vmark_th is a range not a single value. Each end of the range is a valid value. The test conditions refer to values outside this range.

Cl **33** *SC* **33.3.3.5** *P* **72** *L* **17** # 19

LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **A** *ez*

The rotated "VPort_PD" is, for some reason, typeset in Times New Roman.

SuggestedRemedy

Re-set it in Arial.

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.3.3.5** *P* **72** *L* **30** # 24

LANDRY, MATTHEW SILICON LABS

Comment Type **TR** *Comment Status* **A** *ez*

The DLL diagram gets kicked off as soon as the PD enters MDI_POWER1. The DLL diagram could then quickly (within a few ms) receive a PSE TLV, which sets the pse_dll_power_type to 2. This lets the PD jump from MDI_POWER1 to MDI_POWER2.

All of this can easily happen before the tpowerdly_timer would have run out. Thus the PD will enter a high power mode prior to the PSE having exited its inrush period, resulting in an overload.

SuggestedRemedy

Do not skip the MDI_POWER_DLY state. Remove the existing pse_dll_power_type transition, and change the transition from MDI_POWER1 to MDI_POWER_DLY to (pse_power_type = 2)+(pse_dll_power_type = 2).

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.3.3.5** *P* **72** *L* **30** # 23

LANDRY, MATTHEW SILICON LABS

Comment Type **TR** *Comment Status* **A**

When the PD is powering up, the pse_dll_power_type variable will have no value, as it is not initialized until the DLL state diagram is started. This happens after the PD enters MDI_POWER1.

Logically, if pse_dll_power_type is undefined, then (pse_dll_power_type = 2) is still false. Implementationally, the software will have a known initialization state, preventing the host CPU from signaling that the PD should enter MDI_POWER2.

SuggestedRemedy

The PD has another variable, dll_ready, that doesn't get set until the DLL state diagram has initialized. This could be used as an additional qualifier to jump from MDI_POWER1 to MDI_POWER2: (pse_dll_power_type = 2)*(dll_ready).

This requires adding a definition for dll_ready to the PD state diagram section. However, the same indeterminate logic state argument may be made.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

P71, L37: add "(default)" to Type 1 PSE.
Also on P103, L5.

Cl **33** *SC* **33.3.3.5** *P* **90** *L* **3** # 73

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **R**

Draft D3.2 Figure 33-18:

We change Vport to Vport_PD at the state machine and other locations in the text in order to differentiate from PSE Vport and yet Figure 33-18 change to be with Vport and not Vport_PD in multiple locaions.

SuggestedRemedy

Replace Vport to Vport_PD in all locations in Figure 33-18

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

It appears this change has been made in the draft. Can the commentor clarify?

Cl **33** *SC* **33.3.4** *P* **73** *L* **45** # 74

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **A**

Draft D3.2
Table 33-14:
Change the minimum value of Rdetect from 23.8 TO 23.7 to support legacy.
Rounding up the number is not good practice for worst case.

SuggestedRemedy

Change the minimum value of Rdetect from 23.8 TO 23.7

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Although the objective of using the same number of significant digits is a good practice, its implementation appears to "change" the requirements of 802.3-2005. The original values are referenced as a part of the guardband in line 37 just above table 33-14(P73 L37), causing the guardband to be within the allowable range.

Change table 33-14 entries for Rdetect minimum to 23.7 and maximum to 26.3. Fix significant digit errors above table. Editor to scan the doc for the numbers in the text and fix.

Cl **33** *SC* **33.3.4** *P* **73** *L* **9** # 40

Jones, Chad — Cisco

Comment Type **E** *Comment Status* **A** *ez*

"A Type 2 PD presents a non-valid detection signature when in a mark event state per Figure 33-18."
move this sentence. make it the third paragraph. this keeps the general PD valid and non-valid statements together then adds mark state after completing the thought.

SuggestedRemedy

move this sentence. make it the third paragraph.

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.3.4** *P* **74** *L* **25** # 35

Schindler, Fred — Cisco

Comment Type **E** *Comment Status* **A**

Figure 33-19 does not show Ios.

SuggestedRemedy

Add Ios to the y-axis.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

OBE 51

Cl **33** *SC* **33.3.4** *P* **92** *L* **39** # 51

Darshan, Yair — Microsemi Corporation

Comment Type **ER** *Comment Status* **A**

Figure 33-19
The dashed line coming from the V-I slope looks like it crosess the origin which may not be the case.

SuggestedRemedy

1. Delete the dashed line part of the V-I slope. It is not required for the Vofset and Iofset definitions.
2. Add lable Ioffest at the horizontal line croses the Iport axis.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

bump curve up slightly so that I-V slope dashed line does not intercept 0,0.

Add Ioffset to the horizontal line croses the Iport axis

Cl **33** *SC* **33.3.5** *P* **74** *L* **40** # 41

Jones, Chad Cisco

Comment Type **E** *Comment Status* **A**

"A PD shall meet one of the allowable classification permutations listed in Table 33-8." does anyone else worry this is confusing to the reader? Do they read this and say, "oh, I only have to conform to one!" then read the table and find that if you conform to the one valid type 2 permutation that you automatically conform to one the Type 1 permutations?

SuggestedRemedy

"A PD shall meet at least one of the allowable classification permutations listed in Table 33-8."

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.3.6** *P* **76** *L* **12** # 148

Thompson, Geoffrey Nortel

Comment Type **TR** *Comment Status* **R**

D3.1 comment 194
I do not accept the response.
The methodology is contrary to the well accepted and proven practices of 802.3

SuggestedRemedy

Of the the 3 systems elements, PSE, cabling, PD
specify only two.

Response *Response Status* **U**

REJECT.

Vote to pursue suggested remedy from D3.1 comment (many choices, TF to pick one):

Y: 0 N: 15 A: 2

The methodology has served well since the release of 802.3af in June 2003 so it is not without precedent. Furthermore, while commenter may be correct with respect to data communications standards, this degree of specificity is not uncommon in remote powering systems.

The system is defined by a quadratic equation which has two solutions for each operating point; one of which is unstable. Our rigid specification ensures operation at the stable solution.

Additionally, this is a new feature request. The TF has adopted the stance that it will take on no new work as of July 08. New feature requests require an accompanying solution. Commenter is welcome to submit marked up sections and new text required to implement comment for consideration. This is not a trivial change as it would touch many parts of the document.

Cl **33** *SC* **33.3.6** *P* **78** *L* **12** # 31194

Thompson, Geoff Nortel

Comment Type **TR** *Comment Status* **R**

Overall comment.
I believe that the system (i.e. PSE, cabling and PD) is over specified. Given our system configuration once you specify two fo the elements, you have defined the results for the third and additional "shalls" just get in the way and provide the potential for technical conflict.

SuggestedRemedy

A number of solutions are possible. I suggest making PSE and cabling normative and just make the PD tolerate the results. That would require changing 33.3.7, page 78, line 12 to read something like:
"The power supply of the PD shall operate within the system constraints of the specified PSE and cabling systems. Those resulting values are provided in Table 33-18 for reference."

Response *Response Status* **U**

REJECT.

The TF has purposely engineered margin into the specifications of the PSE and PD by rigidly specifying each end, with the added bonus of ensuring interoperability. The Table has worst case values and a PD that conforms will be ensured to interoperate.

Vote to reject
y- 14 n-1

Cl **33** *SC* **33.3.7** *P* **76** *L* **34** # 36

Schindler, Fred Cisco

Comment Type **E** *Comment Status* **A**

Information was lost when this parameter was made a numerical value.

SuggestedRemedy

Add the following note:
"Note Vport_PD = VPSE - Rchan x Iport."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add to the end of L50 on page 77.

Cl **33** *SC* **33.3.7** *P* **77** *L* **17** # 25

LANDRY, MATTHEW SILICON LABS

Comment Type **T** *Comment Status* **A**

If we have truly decided to make tables more readable by removing expressions and replacing them with their evaluated result, the Class 4 PPeak_PD needs to be replaced.

SuggestedRemedy

Replace:
1.11 x PClass_PD

With:
28.3

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change table 33-18 per the recommendation.

The basis of this number will be lost is we do not record it and its intent. Add the following sentence to S33.3.7.4, P 79, L17:
"Peak class 4 power is based on Equation 33-9a (1.11 * Pclass_PD) [ed note: make it an equation] which approximates the same ratiometric peak power of Classes 0 through 3. This equation may be used to calculate peak operating power for Pclass_PD values obtained via DLL classification."

Cl **33** *SC* **33.3.7** *P* **78** *L* **25** # 31199

Thompson, Geoff Nortel

Comment Type **TR** *Comment Status* **R**

Also, line 34
It makes no sense to have different voltage ranges for Type 1 vs. Type 2 PDs as each has to behave identically during the start-up when Data Link Layer communication is being established. Specifically a Type 2 PSD has to operate at the low voltage of a Type 1 during this phase of operation

SuggestedRemedy

In Table 33-18, item 1, eliminate the Type 2 entry and have the Vmin parameter be 37 for all PDs under all conditions.

In Table 33-18, item 2, eliminate the Type 2 entry and have the Vmin parameter be 36 for all PDs under all conditions.

Response *Response Status* **U**

REJECT.

The differing minimum input voltages ensure maximum power delivery for each PD type. Higher operating voltages result in less cable loss making the system more efficient.

Also, see comment 58 for additional arguments against this solution.

Table 33-18 item 1 is for static operating input voltages, and includes the rated input power. This is correct. However it is desirable that a type 2 PD start like a type 1 PD if installed in an ".af" worst-case environment. This appears to be covered by the following:

Section 33.3.2 (P72 l5) indicates that a type 2 PD must conform to type 1 power restrictions.

33.3.5.2 (P77 l15) states a T2 PD only seeing a T1 PSE should conform to T1 electricals of T33-18.

33.3.7.3 states that a T2 PD should behave like a T1 PD during/after inrush/poweron.

Cl **33** *SC* **33.3.7.1** *P* **72** *L* **2** # 20

LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **A** *ez*

RCh is not properly subscripted.

"The PD shall turn on or off without startup oscillation and within the first trial at any load value when fed by
VPort min to VPort max (as defined in Table 33-11) with RCh (as defined in Table 33-1)."

SuggestedRemedy

Properly subscript RCh.

Response *Response Status* **C**

ACCEPT.

See page 78 L2.

Cl **33** *SC* **33.3.7.2** *P* **78** *L* **7** # 52

Darshan, Yair Microsemi Corporation

Comment Type **ER** *Comment Status* **A**

The text "within this range" may be unclear although it can be understood from the previous line.
It is clearer to replace it with "PClass_PD range" as used in the previous line.

SuggestedRemedy

Change from:
"The specification for PClass_PD in Table 33-18 shall apply for the input power averaged over 1 second. PDs may dynamically adjust their required operating power within this range as described in 33.6."

To:
"The specification for PClass_PD in Table 33-18 shall apply for the input power averaged over 1 second. PDs may dynamically adjust their required operating power within PClass_PD range as described in 33.6.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change the first paragraph of 33.3.7.2 to:

The maximum average power, PClass_PD in Table 33-18 or PDMAXPowerValue in 33.6.6.3, is calculated over a 1 second interval. PDs may dynamically adjust their maximum required operating power below Pclass_PD as described in 33.6.

Cl **33** *SC* **33.3.7.3** *P* **78** *L* **35** # 102

Vetteth, Anoop Cisco

Comment Type **TR** *Comment Status* **A**

Should be Iinrush and not Iinrush_pd

SuggestedRemedy

Change Iinrush_pd to Iinrush

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.3.7.5** *P* **98** *L* **2** # 21

LANDRY, MATTHEW SILICON LABS

Comment Type **E** *Comment Status* **A**

The TF agreed that time variables should be defined "in seconds," to avoid possible confusion. This equation was not updated.

SuggestedRemedy

Change to "is the duration in seconds that the PD sinks IPort."

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Comment is against P80, L1

Cl **33** *SC* **33.3.7.6** *P* **80** *L* **24** # 103

Vetteth, Anoop Cisco

Comment Type **TR** *Comment Status* **A** *ez*

The sentence says "A Type 2 PD shall meet one of the following:"

Both conditions need to be met.

SuggestedRemedy

Change to:
A Type 2 PD shall meet both the following:

Response *Response Status* **C**

ACCEPT.

This was the content of D3.1.

Cl **33** *SC* **33.3.7.6** *P* **80** *L* **31** # 75

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **A** *ez*

Draft D3.2
The input voltage source upper limit is missing

SuggestedRemedy

Change from:
"The input voltage source drives VPort_PD from 50 V at 2250 V/s, the.."

To:

"The input voltage source drives VPort_PD from 50 V to 56V at 2250 V/s, the..."

Response *Response Status* **C**

ACCEPT.

Proposed text was in D3.1 and was inadvertently left out.

Cl **33** *SC* **33.4.8** *P* **87** *L* **50** # 58

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **R**

Draft D3.2

The current text is not clear regarding the fact that the initial conditions are that the channel unbalane is 3% and actually the Midspan need to reduce the unbalnce factor of the channel from 3% to a lower value.

SuggestedRemedy

Change line 50 from:
"Alternative A Type 2 Midspan PSEs that support 100BASE-TX shall ensure channel unbalance currents less than or equal to Type 1 Iunb (see Table 33-11)."

To:
"Alternative A Type 2 Midspan PSEs that support 100BASE-TX shall reduce channel unbalance currents from Type 2 Iunb to less than or equal to Type 1 Iunb (see Table 33-11)."

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

The original text allows the Midspan vendor to ship his Alt-A equipment with the caveat that the user should use a channel that has tighter unbalance, which is the intent. The proposed text necessitates that the midspan reduces Iunbalance, so technically midspans that do not actively/passively compensate for the unbalance are non-complaint.

Cl **33** *SC* **33.4.8** *P* **87** *L* **51** # 76

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **R**

We are doing the same mistake we did in the past in which the 350uH adhoc was formed to resolve by allowing the droop method (implementation independent) as alternative to the OCL (specific implementation).

In order to achive 350uH (or its equivalent droop numbers) operation when Type 2 100BT ALT A Midspan is connected we forced implementation (regulating Iunb to Type 1 levels) instead of specifying the Midspan output TX signal requirements so legacy recivers in the Switch will work.

SuggestedRemedy

Set the Midspan ad hoc to discuss it and propose a solution.
See attached file "Midspan 100BT ALT A TX output signal template" with possible alternative.

Response *Response Status* **U**

REJECT.

The TF has reviewed the presentation and the following vote was taken on the adoption of the presentation.

Y: 4 N: 11 A: 8

26%, no consensus to change existing text and existing text stands.

Cl **33** *SC* **33.4.9** *P* **88** *L* **10** # 77

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **A**

The references in line 6-7 should be the same as specified in 33.1.4.1 for Type 2.

SuggestedRemedy

Add the following text after line 10:
"Type 2 Midspan PSE cabling system requirements are specified in 33.1.4.1"

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.4.9** *P* **88** *L* **7** # 127

Dawe, Piers — Avago Technologies

Comment Type **T** *Comment Status* **A**

ANSI/TIA-568-C used in 33.4.9, not in references.

SuggestedRemedy

Add ANSI/TIA-568-C to 1.3 Normative references.
Add parts C.0, C.2 also?

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add ANSI/TIA-568-C.0 and ANSI/TIA-568-C.2 to 1.3 Normative references

change ANSI/TIA-568-C to ANSI/TIA-568-C.2 throughout document.

Cl **33** *SC* **33.4.9.2** *P* **91** *L* **23** # 78

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **A**

Equation 33-18 need to be checked with 120uH PD.

SuggestedRemedy

See attached results and reccomendations in the attached file "Midspan/Channel Requirements below 1MHz for 120uH OCL operation"
There is small adjustments required to Eq 33-18.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See Darshan_1_0811.pdf.

Eq 33-18 is not affected due to the requirement that Midspan need to regulate Iunb to Type 1 levels hence OCL in PD and Switch stays as in Type 1 systems i.e. 350uH minimum.

Accepting the comment results in no change to the text.

Cl **33** *SC* **33.4.9.2** *P* **91** *L* **29** # 128

Dawe, Piers — Avago Technologies

Comment Type **T** *Comment Status* **A**

You say 'Additionally, the requirements will be met with'

SuggestedRemedy

Do you mean are met or shall be met?
Which requirements? Just the Midspan signal path requirements or more than that?

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

change: Additionally, the requirements will be met with

to: The requirements shall be met with

Cl **33** *SC* **33.4.9.2** *P* **91** *L* **29** # 57

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **A**

Draft D3.2
Per the last decisions made in September 2008 meeting we need to delete the "0" in the Ibias formula.

Rational:
If the Midspan PSE is regulating the Iunb to the Type 1 levels when operating in ALT A 100BT, than the place holder should stay with zero value.
(OCL is kept to 350uH per the current specifications for Type 1 systems and the current 802.3 standard)

SuggestedRemedy

Change from:
(0 + Iunb/2)

To:
(Iunb/2)

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.5.1.1.1** *P* **92** *L* **54** # 129

Dawe, Piers — Avago Technologies

Comment Type **T** *Comment Status* **A**

You say 'the management entity should write to reserved bits with a value of '0' and ignore reserved bits on read.' I don't know why you are encouraging it to write or read reserved bits.

SuggestedRemedy

Ask an expert, but here's my suggestion: change to 'if the management entity writes to a reserved bit, it should use with a value of '0', and if it reads a reserved bit, it should ignore the result.' Similarly at 33.5.1.2.1

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

'if the management entity writes to a reserved bit, it should use a value of '0', and if it reads a reserved bit, it should ignore the result.'

scan text for 'reserved bit' and ensure we are consistant throughout

Cl **33** *SC* **33.5.1.1.2** *P* **93** *L* **20** # 131

Dawe, Piers — Avago Technologies

Comment Type **T** *Comment Status* **A** *ez*

Sometimes text has '1' or '0', sometimes logic one or logic zero. Why the mixture?

SuggestedRemedy

In the text, change '1' or '0' to one or zero.

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.5.1.1.2** *P* **93** *L* **34** # 130

Dawe, Piers — Avago Technologies

Comment Type **T** *Comment Status* **A** *ez*

Removing some clutter. Compare Clause 45.

SuggestedRemedy

Change all 'logic one' to 'one', all 'logic zero' to 'zero'

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.5.1.1.4** *P* **94** *L* **16** # 132

Dawe, Piers — Avago Technologies

Comment Type **T** *Comment Status* **R**

Text contradicts Table 33-21

SuggestedRemedy

Reconcile

Response *Response Status* **C**

REJECT.

Text matches the enable modes defined in the table. The commenter is invited to clarify the contradiction further.

Additionally, the table takes precedence so there is no contradiction.

Cl **33** *SC* **33.6.2.2** *P* **99** *L* **13** # 94

Vetteth, Anoop — Cisco

Comment Type **ER** *Comment Status* **A**

When we crafted lines 17-19 in Seoul, the intent was to use just those lines as the description of PD requested power value field (just like how we did for the PSE section). The intent was to get rid of earlier text.

SuggestedRemedy

Remove lines 13-15 since the information is redundant.

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.6.6** *P* **100** *L* **49** # 79

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **R**

The text "The power control state diagrams for PSEs and PDs specify the externally observable behavior of a PSE and PD..." is true for all state diagrams as well however we delete this text from 33.2.4.7

SuggestedRemedy

Add the following text at the beining of each state diagram clause:
"The following state diagram specify the externally observable behavior of a PSE. (or a PD, Editor to use the relevant term per the relevant clause)

Response *Response Status* **C**

REJECT.

Based on the comment, the text exists in the location pointed.

Cl **33** *SC* **33.6.6.2** *P* **101** *L* # 105

Vetteth, Anoop — Cisco

Comment Type **TR** *Comment Status* **A**

If my comment on Ilim/Tlim (avetteth_PSE_Current_Limit.pdf) is accepted, then a better and more accurate definition of PSE_INITIAL_VALUE is shown in remedy

SuggestedRemedy

parameter_type □mr_pd_class_detected□PSE_INITIAL_VALUE
1□□0□□□130□
1□□1□□□39
1□□2□□□65
1□□3□□□130
1□□4□□□130
2□□4□□□255

All other combinations are not permissible for compliant implementations.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

parameter_type mr_pd_class_detected PSE_INITIAL_VALUE
1 0 130
1 1 39
1 2 65
1 3 130
1 4 130
2 4 255

Cl **33** *SC* **33.6.6.2** *P* **101** *L* **20** # 104

Vetteth, Anoop Cisco

Comment Type **TR** *Comment Status* **A**

Constant PD_INITIAL_VALUE

Due to some changes to definition of pd_max_power during the last commenting cycle this constant needs to be updated:

SuggestedRemedy

This value is derived as follows from pd_max_power (33.3.3.3) variable used in the PD state diagram (Figure 33-18)

pd_max_power□□PD_INITIAL_VALUE
0□□□<=130
1□□□<=39
2□□□<=65
3□□□<=130
4□□□<=255

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.6.6.2** *P* **101** *L* **36** # 53

Darshan, Yair Microsemi Corporation

Comment Type **ER** *Comment Status* **A**

I can't find were the variable PSE_INITIAL_VALUE is used

SuggestedRemedy

L2 ad hoc to show were it is being used in the state machine

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change PD_INITIAL_VALUE in fig 33-30 to PSE_INITIAL_VALUE.

Cl **33** *SC* **33.6.6.3** *P* **102** *L* **1** # 109

Vetteth, Anoop Cisco

Comment Type **TR** *Comment Status* **A**

All Power Values have max value of PD_DLLMAX_VALUE. Only the PD is forbidden from requesting for more power than it advertized over hardware classification. Forcing max value for all variables to PD_DLLMAX_VALUE is not correct since this variable is defined only for the PD and not the PSE.

According to how it is written now; a PSE that lets a misbehaving PD draw more than what it negotiated using hardware classification is also non-compliant. The PSE is allowed to advertise anything it wants.

SuggestedRemedy

Change the max value for all power variables other than PDRequestedPowerValue from PD_DLLMAX_VALUE to 255.
A better alternative would be to use a constant for 255 so that it will be easier to change this in future.

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change the max value for all power variables other than PDRequestedPowerValue from PD_DLLMAX_VALUE to 255.

Cl **33** *SC* **33.6.6.5** *P* **103** *L* **45** # 106

Vetteth, Anoop Cisco

Comment Type **TR** *Comment Status* **A**

The function examine_request also returns the variable PSE_New_Value just like the function pse_power_review

SuggestedRemedy

Copy from pse_power_review

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.6.6.6** *P* **104** *L* **1** # 107

Vetteth, Anoop Cisco

Comment Type **TR** *Comment Status* **A**

The entry condition to INITIALIZE state for PSE should be:
!pse_dll_enabled + !pse_dll_ready

for PD state diagram should be:
!pd_dll_enabled + !pd_dll_ready

SuggestedRemedy

Fix this

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.6.6.6** *P* **105** *L* **1** # 108

Vetteth, Anoop Cisco

Comment Type **TR** *Comment Status* **A**

The assignment
pse_dll_power_type <= 1
in the INITIALIZE state is not correct since a type 2 PSE that performs 2 event classification can set dll_power_type to 2

SuggestedRemedy

Change to
pse_dll_power_type <= pse_power_type

Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.6.7.1** *P* **106** *L* **26** # 83

sastry, ramesh Cisco Systems

Comment Type **T** *Comment Status* **R**

Add the following sentence to add more clarity to the description.

SuggestedRemedy

In the case, when PSE wants to initiate a change to the PD power allocation and PSE sees that there is a request pending from PD with a new power number, the PSE's local_syatem_chage has a higher priority over the PD's request.

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

Is this necessary?

Cl **33** *SC* **33.6.7.2** *P* **106** *L* **34** # 89

Vetteth, Anoop Cisco

Comment Type **E** *Comment Status* **R**

Missing "if"

MirroredPSEAllocatedPowerValue or if local_system_change

SuggestedRemedy

Fix this

Response *Response Status* **C**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **33** *SC* **33.6.7.2** *P* **106** *L* **42** # 90

Vetteth, Anoop Cisco

Comment Type **E** *Comment Status* **A**

Second Paragraph is redundant

SuggestedRemedy

Strike it

Response *Response Status* **C**

ACCEPT.

Cl **99** *SC* **99** *P* **10** *L* **49** # 138

Dawe, Piers — Avago Technologies

Comment Type **E** *Comment Status* **A** *ez*

There is a newer version of this page

SuggestedRemedy

Ask P802.3av for it

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The chair will make the request.

Cl **99** *SC* **99** *P* **2** *L* **1** # 135

Dawe, Piers — Avago Technologies

Comment Type **T** *Comment Status* **R**

Abstract and keywords

SuggestedRemedy

Please provide these for next recirculation, or at the latest at opening of Sponsor Ballot, so they get some review.

Response *Response Status* **C**

REJECT.

The TF does not generate the abstract and keywords. This is beyond our scope and we will not task the editor with work that will be overwritten.

Cl **99** *SC* **99** *P* **3** *L* **8** # 136

Dawe, Piers — Avago Technologies

Comment Type **E** *Comment Status* **A** *ez*

One exceptions, conciously

SuggestedRemedy

One exception, consciously

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

change first sentence of second paragraph on page 3 to: "One exception to IEEE style that is consciously used to simplify."

Cl **99** *SC* **99** *P* **4** *L* **35** # 134

Dawe, Piers — Avago Technologies

Comment Type **E** *Comment Status* **A** *ez*

I doubt that errata for all the world's standards are available at this URL.

SuggestedRemedy

Change 'all other standards' to 'all other IEEE standards'

Response *Response Status* **C**

ACCEPT.

Cl **99** *SC* **99** *P* **4** *L* **5** # 137

Dawe, Piers — Avago Technologies

Comment Type **E** *Comment Status* **A**

.Section

SuggestedRemedy

Section
Line 12, 10 split from Gb/s over a line break. Use non-breaking space and if necessary, the Frame option to stop s being split from Gb/.
Line 18, change 'of the IEEE Std 802.3 standard with' to 'of IEEE Std 802.3 with'
Line 23, use new .3av clause numbers (75 to 77, 75A, 75B, 75C, 76A)
Line 24, change 'operation point-to-multipoint' to 'operation on point-to-multipoint'

Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Multiple comments in one comment:

1: remove leading period from the word Section on line 5.

2: use a non-breaking space for 10Gb/s at line 12 and if necessary, the Frame option to stop s being split from Gb/.

3: change 'of the IEEE Std 802.3 standard with' to 'of IEEE Std 802.3 with' at line 18/19

4: Line 23, use new .3av clause numbers (75 to 77, 75A, 75B, 75C, 76A) - rejected, this is a change against 802.3-2005. Publication Editors will update clause numbers.

5: Line 24, change 'operation point-to-multipoint' to 'operation on point-to-multipoint'