Cl **01** *SC* **1.2.1** *P* **3** *L* **10** # **450**

Thompson, Geoffrey O. Nortel

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

Definition (1.2.1 Midspan: A location in a twisted pair link where no DTE or DCE function is present with respect to the twisted pair link.) needs work. First, I believe that you mean with respect to a T-P link segment rather than a T-P link.

SuggestedRemedy

1.2.1 Midspan: A location in a twisted pair link segment where power is inserted but there is no DTE or DCE function present.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

1.4.?? Midspan: A location in a link segment that is distinctly separate from the MDIs.

Cl **01** *SC* **1.3** *P* **3** *L* **15** # **268**

Tom Mathey Independent

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

The abbreviation "DCE" used in 1.2.1 needs to be added to the list given in 1.3 as "DCE" is not in the base standard.

SuggestedRemedy

Add "DCE" definition.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

"DCE" has been stricken from the document.

Cl **30** *SC* *P* **6** *L* # **734**

Maurice, Reintjes Mindspeed

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

Please incorporate comments by David Law regarding clause 30
see presentation: Proposed MIB additions for 802.3af by David Law dated July 26th, 2001. Please see David Law for details. Some, but not all of the comments have been resolved.

SuggestedRemedy

[as proposed]

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

By the motion of Law and McCormack.

Cl **30** *SC* **30.1.4** *P* **7** *L* **1** # **452**

Thompson, Geoffrey O. Nortel

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

Management Model Figure 30-3
The Entity Relationship Diagram is incomplete with respect to DTE Power.
There needs to be an additional equivalent diagram for a Mid-Span Insertion PSE.

SuggestedRemedy

Add another diagram for Mid-Span PSE
It would have the following boxes:
oMidSpan
oResourceTypeID
oGroup
oPSE
oGroup to oPSE would have a "one to many" relationship arrow.
oMidSpan to oGroup would have a "one to many" relationship arrow.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Being revised by David Law

Cl **30** *SC* **30.30** *P* **6** *L* **1** # **685**

Law, David J 3Com

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

The Annex 30A and 30B for this updated Clause 30 is missing.

SuggestedRemedy

Add Annex 30A and 30B update.

Note - Please see my Annex 30A/30B update proposal supplied in attached FrameMaker file.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.9.1.1.7** *P* **12** *L* **14** # **392**

Darshan, Yair PowerDsine

Comment Type **T** *Comment Status* **A** *Management objects*

Class 5 was deleted

SuggestedRemedy

Delete line 14: " Class 5 Class5 PD"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.9.1.1.8** *P* **11** *L* **37** # **700**

Thaler, Pat — Agilent Technologies

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

The attributes in clause 30 are all designed to allow multiple independent management applications to access the values. Therefore, they do not use values that are cleared or reset because there would be no way of knowing that another manager had cleared the value since you last read it.

To do this, status indications should either report the current value or be a counter of times when a condition has occurred. Latching until cleared is not acceptable in Clause 30. (Such objects may be supported by an underlying latching until cleared indication over the MII since the MII has a single management agent that is doing the clearing.)

SuggestedRemedy

Either change this object to report the present status or change it to two rollover counter objects, one for under current and one for over current.

Delete the Action that clears this object.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Create counters with a maximum count rate of once every second and live status bits for over- and under-current.

Cl **30** *SC* **30.9.1.1.8** *P* **12** *L* **32** # **456**

Thompson, Geoffrey O. — Nortel

Comment Type **T** *Comment Status* **A** *Management objects*

The enumerated list here probably also needs an additional value for either "unknown" or "not supported"

SuggestedRemedy

[as proposed]

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add "unknown"

Cl **30** *SC* **30.9.2.1.2** *P* **13** *L* **49** # **331**

Dawe, Piers — Agilent

Comment Type **TR** *Comment Status* **A** *Management objects*

I_Port is not in table 33-10.
I_Port has minima and maxima.
30.9.2.1.2
33.6.1.2.3

SuggestedRemedy

"greater than the minimum value of I_Port ..."
Table 33-5 or 33-12?
Also 33.6.1.2.3

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Table 33-12
change in both locations

Cl **30** *SC* **30.9.2.1.3** *P* **14** *L* **1** # **393**

Darshan, Yair — PowerDsine

Comment Type **TR** *Comment Status* **A** *Management objects*

It was decided that PD will support both modes A and B thus information regarding how PD pin out is configured is not required

SuggestedRemedy

Delete paragraph 30.9.2.1.3

Proposed Response *Response Status* **C**

ACCEPT.

Cl **30** *SC* **30.9.2.1.3** *P* **14** *L* **6** # **676**

NAKAMURA, KARL — CISCO SYSTEMS

Comment Type **T** *Comment Status* **A** *Management Objects*

Lines 6-8 attributes for the PD
Signal PD Pinout Mode A
Signal PD Pinout Mode B
well we agreed that a PD must support both Alternative A and B???
conflicts with Page 28, Line 21

SuggestedRemedy

Either Clarify or remove these statements

Proposed Response *Response Status* **C**

ACCEPT. Attribute to be removed.
Also remove pair status bits 33.6.1.2.2.

Cl **33** *SC* **33.1** *P* **15** *L* **10** # **10**

Brown, Benjamin AMCC

Comment Type **T** *Comment Status* **A** *DTE overview and goals*

Change the wording of this sentence to include a shall rather than stating what is compliant.

SuggestedRemedy

Replace the last sentence of this paragraph with:

"Systems which employ power via the MDI shall use the method described in this clause."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Will insert compatibility considerations similar to 23.1.5.1.

Cl **33** *SC* **33.1** *P* **15** *L* **16** # **394**

Darshan, Yair PowerDsine

Comment Type **T** *Comment Status* **A** *DTE overview and goals*

Does specifying the 100 OHM is a must. What about 120 Ohm CAT 5 cables as specified in ISO/IEC 11801

SuggestedRemedy

Delete the 100 Ohm and reword to:
" a power source to add power to the balanced twisted-pair cabling system"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

a power source to add power to the100-ohm balanced cabling system

Cl **33** *SC* **33.1** *P* **15** *L* **41** # **462**

Thompson, Geoffrey O. Nortel

Comment Type **T** *Comment Status* **A** *DTE overview and goals*

The text:
"Power -Powered Devices designed to the standard will require no additional connection other than the MDI to obtain power and data for operation."
may not be correct for all equipment, that is, some equipment may need more power that can be supplied via the MDI for "normal" operation

SuggestedRemedy

"Power -Powered Devices designed to the standard and within its range of available power will require no additional connection other than the MDI to obtain power and data for operation."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.1** *P* **15** *L* **8** # **457**

Thompson, Geoffrey O. Nortel

Comment Type **T** *Comment Status* **A** *DTE overview and goals*

The text: "This layer allows data terminal equipment to draw power from the same conductors used for data transmission." is not precisely descriptive of both options.

SuggestedRemedy

Replace with: "This sublayer allows data terminal equipment to draw power from the same generic cabling as that used for data transmission."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.1.2** *P* **15** *L* **41** # **395**

Darshan, Yair PowerDsine

Comment Type **T** *Comment Status* **A** *DTE overview and goals*

According to 33.1.2-a Power via MDI provides power, and Powered Devices designed to the standard will required no additional connection to obtain power.
It means that if we want to connect PC with external backup source it is not allowed in order to stay compatible with the standard.

SuggestedRemedy

Change from "will" to "may"
"a) Power- Powered Devices .....may require no additional....for operation"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 462.

Cl **33** *SC* **33.1.2** *P* **15** *L* **41** # **446**

Paul Nikolich self

Comment Type **T** *Comment Status* **A** *DTE overview and goals*

The subclause

"a)Power -Powered Devices designed to the standard will require no additional connection other than the MDI to obtain power and data for operate on."

assumes the powered device will not require power beyond what is available from the powered device--this may or may not be true.

SuggestedRemedy

Change "will" to "may" in the above clause.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 462.

Cl **33** *SC* **33.1.3** *P* **16** *L* **3** # **736**

Jonathan Thatcher World Wide Packets

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

The sentence on line 3 does not agree with Figures 33.1 and 33.2. The sentence is correct. The PD and PSE comprise, and are therefore parallel to, all layers within the device (not just the PHY layer). Showing the PD and PSE provides no useful information when shown correctly.

SuggestedRemedy

Figures 33.1 and 33.2 should be corrected to show the power layer (not the PD and PSE) between Layer 1 and the Media (Layer 0). The data is passed through the power layer unchanged. This should be explained in supporting text.
L2: LLC & MAC
L1: PHY
L0+: Power
L0: Media

It might be more correct, and less confusing when mapping to the OSI layer definition, to show the power layer on the other side of the media:
L2: LLC & MAC
L1: PHY
L0: Media
L-1: Power
L0: Media
In this form, the Media layer between L1 and L-1 is optional (this makes the concept of Figures 33.1, 33.2, and 33.3 consistent).

Proposed Response *Response Status* **U**

REJECT.

The Power layer resides above the MDI.
Data and power are orthogonal to each other.
One does not flow through the other.

Cl **33** *SC* **33.2.1** *P* **18** *L* **43** # **699**

Thaler, Pat Agilent Technologies

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

It appears that this statement is inaccurate. There are reasonable attempts provide convenience that have not been made. Auto MDI/MDI-X ports are reasonably common. The situation of an auto MDI/MDI-X port on a PD or PSE should not be allowed to cause an inability to receive power.

SuggestedRemedy

Require PDs to support polarity insensitivity.

Proposed Response *Response Status* **C**

ACCEPT.

Rewrite Table 6 so that MDI devices do not have to be polarity-insensitive,
but MDI-X and auto MDI-X devices shall be polarity-insensitive.

Cl **33** *SC* **33.2.1** *P* **18** *L* **48** # **466**

Thompson, Geoffrey O. Nortel

Comment Type **TR** *Comment Status* **A** *PSE MDI*

This says that my imbalance is limited to 6.13 ma UNLESS active current balancing is present. If you have active current balancing then you have NO BALANCE REQUIREMENT !

SuggestedRemedy

Replace with: "The current difference measured at the PSE connector between two conductors of the same pair shall not exceed 6.13mA."

Proposed Response *Response Status* **C**

ACCEPT.

Handled in editorial comment 447.(571)

Cl **33** *SC* **33.2.1** *P* **18** *L* **48** # **648**

karam, roger cisco

Comment Type **T** *Comment Status* **A** *PSE MDI*

differ by more than 6.13ma

SuggestedRemedy

well we need the magnetic guys to make sure that this will not chew away at the allowed 8ma Max spec of the 100TX!!! this may be a problem.
also if 6.1ma is ok, can we please make it 6ma...

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 571

Cl **33** *SC* **33.2.1** *P* **18** *L* **48** # **571**

Hinrichs, Henry Pulse Inc.

Comment Type **T** *Comment Status* **A** *PSE MDI*

Several individuals commented that specified current (6.13 mA) was too exact.

SuggestedRemedy

Change value to 8 mA.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add note:
This current is not cumulative with the current specified in 9.1.7 within TP-PMD (see 25.2).

Cl **33** *SC* **33.2.1** *P* **18** *L* **49** # **397**

Darshan, Yair PowerDsine

Comment Type **T** *Comment Status* **A** *PSE MDI*

The word "unless" does not help to understand what will be the requirement if active current balancing is implemented by the PSE.
What are the chances that active current balancing will be required?

SuggestedRemedy

Define specifically what is the requirement if active current balancing is being used.

Proposed Response *Response Status* **Z**

ACCEPT IN PRINCIPLE.

Cl **33** *SC* **33.2.1** *P* **19** *L* **23** # **13**

Brown, Benjamin AMCC

Comment Type **T** *Comment Status* **A** *PSE MDI*

[lines 23-25] Change the wording. Both sentences say essentially the same thing but the shall winds up inside parenthesis.

I call this technical not because I'm changing the meaning but because it moves a shall. Feel free to down grade...

SuggestedRemedy

Remove the next to last sentence of this paragraph (starting with "Implementation and operation..."

Replace the last sentence of this paragraph with:

"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 simultaneously." Remove the italics.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comments 603 and 371.

Cl **33** *SC* **33.2.1** *P* **19** *L* **23** # **701**

Thaler, Pat Agilent Technologies

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

If a device is capable of two forms of operation than it has both of them implemented.

SuggestedRemedy

Replace "implementation and operation" with "Simultaneous operation"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 13.

Cl **33** *SC* **33.2.1** *P* **19** *L* **24** # **371**

Booth, Brad Intel

Comment Type **T** *Comment Status* **A** *PSE MDI*

Paranthetical encapsulation of a shall. Misuse of italics.

SuggestedRemedy

Remove paranthesis and italics.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.10** *P* **27** *L* **1** # **642**

Lisa Leo Tyco Electronics

Comment Type **T** *Comment Status* **A** *Power Removal*

[lines 1-16] At least one technically proven disconnect method is included in the standard.

SuggestedRemedy

Keep the DC method. If the pulse-link method is proven unreliable, add the AC method.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution of comment 678.

Cl **33** *SC* **33.2.10** *P* **27** *L* **10** # **289**

Dawe, Piers Agilent

Comment Type **TR** *Comment Status* **A** *Power Removal*

"... maintain any one of... A PD that does not maintain any of ...

SuggestedRemedy

... both of: ... either of ...

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Whole section was reworded.

Cl **33** *SC* **33.2.10** *P* **27** *L* **12** # **506**

Nadeau, Gerard — UNH InterOperability L

Comment Type **T** *Comment Status* **A** *Power Removal*

Line 12: ...Table 12, and,...
Line 15: ...items a or b...

For power removal do you have to maintain Link AND Current or is it Link OR Current?

Also,

Line 10 to 15: A PD...maintain...a) and b) MAY be disconnected...
Line 15 to 16: ..items a or b SHALL be disconnected...

Which is it? Shall or may?

SuggestedRemedy

Is it "MAY" or "SHALL." Basically the statement is made twice but they conflict.

Fix the conflict. :)

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution of comment 678.

Cl **33** *SC* **33.2.10** *P* **27** *L* **14** # **689**

Darshan, Yair — PowerDsine

Comment Type **T** *Comment Status* **A** *Power Removal*

We believe that a third alternative for disconnect detection is required based on the reasons that raised over the last few weeks comments received regarding timing issues and hardware issues.

SuggestedRemedy

1. To agree that we need 3rd alternative.
2. To change the following

Line 14: Add alternative c to line 14. Possible wording can be:

"c) Min value of parameter TBD as defined in Table 12"
After analyzing the proposed method (currently we have the cap method in the PD) or other methods and showing technical working concept we will define the TBD.

Line 13: Add ", and" to the end of line 13.

In addition see relevant changes for sub clause 33.3.5 page 31 line 37.
and for Table 12 line 18 page 32.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution of comment 678.,

Cl **33** *SC* **33.2.10** *P* **27** *L* **2** # **744**

Jonathan Thatcher — World Wide Packets

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

There is no clear linkage between OV, UV, OC, UC and other fault conditions with the removal of power.

SuggestedRemedy

Interaction should be made clear.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

We are revising table 5 which includes these fault conditions.

Include in 33.2.10 words addressing error conditions referenced in table 5.

Cl **33** *SC* **33.2.10** *P* **27** *L* **3** # **49**

McCormack, Michael 3Com

Comment Type **TR** *Comment Status* **D** *Power Removal*

Link is a very bad thing to try to hang your hat on, and there is no definition of reasonable time periods for evaluating the reliability of Link if it were used.

SuggestedRemedy

Add a parameter Tlstartup with a 60 second value to table 5, add a parameter of Tlinkdropout with a 60 second value to table 5. Rewrite the entire section to change the requirements of link to be associated to the two times thus defined and specify the current drop out to be associated with its own drop out and start up time limits. OR drop the requirement for Link.

Proposed Response *Response Status* **Z**

Cl **33** *SC* **33.2.10** *P* **27** *L* **3** # **723**

Thaler, Pat Agilent Technologies

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

Why is it "will" rather than "shall"?
There is more than one current in table 33-12 (by the way, your table labeling is not consistant with 802.3 - they should all be in the form of 33-#). Also, the statement as it is requires current to be cut off at exactly 10 mA. There should be a tolerance between the minimum valid current and the point where underload detection is required. I think that is what Imin in table 33-5 was intended for.

SuggestedRemedy

Begin the clause "The PSE shall monitor the current utilized by the link for an underload condition or the PD data link status. It may monitor both.
If the PSE monitors the PD data link, it shall create a value, PD_DATA_LINK which shall be the state of ...."

Change item 6 in table 33-5 to a single entry Under load detection current, IUDL. minimum 5 and maximum 10 see 33.2.10.
Change the minimum current to IUDL.

Also, if it is a midspan PSE and choses to monitor data link status, does it need to monitor both directions? Clarify.

How long should a PSE wait between applying power and beginning to check data link status? I don't think we specify a power up time for any of the PMDs.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE. The text and sections addressed in this comment have been removed and/or
modified by Motion 1 of May 14, 2002.

See comment 678.

Vote to accept: Y:25 N:0

Cl **33** *SC* **33.2.10** *P* **27** *L* **6** # **50**

McCormack, Michael 3Com

Comment Type **TR** *Comment Status* **D** *Power Removal*

The use of Link status to determine the power request signal for Enviroment B implementation flies in the face of the long standing principle of the task force to only involve the conductors actually used in the powering in the powering logic.

SuggestedRemedy

Rewrite the section to specify that Enviroment A implementation may look at Link and Enviroment B implementations are specifically precluded from looking at Link.

Proposed Response *Response Status* **Z**

Cl **33** *SC* **33.2.10** *P* **27** *L* **6** # **535**

Grow, Robert M. Intel

Comment Type **TR** *Comment Status* **A** *Power Removal*

The addition of PD_DATA_LINK to the draft is not technically required, and in fact is broken as to 802.3 clause 28 specifications for auto-negotiation.

SuggestedRemedy

Remove DP_DATA_LINK as a power disconnect mechanism including both PSE and PD specifications (33.3.5).

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Vote to reject the comment: Y:11 N:7 802.3 voters.

Get text from Mr. Thompson

Accept in principle
Change entire sub-clause to read:
"33.2.10 PSE power removal
The PSE shall disconnect the power from a port when a PD is removed or no longer requests power.

The PSE shall remove power from the link segment within the limits of
T PMDO."

Y: 21 N: 5 Ab: 2 75% PASS

Cl **33** *SC* **33.2.10** *P* **27** *L* **6** # **416**

Darshan, Yair PowerDsine

Comment Type **T** *Comment Status* **A** *Power Removal*

Lines 6-9:
The intention of 33.2.10 is that the PSE should monitor the link (=port) and disconnects the power from the port when a PD is removed and no longer request power.
In order to do that the PSE may monitor for a) DC current or b) data link.
Lines 6-9 refer to the data link only.

SuggestedRemedy

Change line 6 from: " The PSE may monitor the PD data link and create a value.."

to: "The PSE may monitor the DC current value as specified in table 5 item 6 or monitor the PD data link and create a value, ..."

In addition, change the word "may" in line 15 to "shall"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution of comment 678.

Cl **33** *SC* **33.2.10** *P* **27** *L* **6** # **564**

Burton, Scott Mitel Networks

Comment Type **T** *Comment Status* **A** *Power Removal*

[lines 6-16] If PSE power removal is to be a function of PD_DATA_LINK then it seems we'll need to allow power to be applied for two or more seconds before disconnecting on power up. If this is the case this would certainly compromise the level of protection offered by the detection circuit.

SuggestedRemedy

Increase TPMDO to 4 seconds or eliminate the option to remove power due to the absence of link.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution of comment 678.

Cl **33** *SC* **33.2.2** *P* **19** *L* **32** # **702**

Thaler, Pat Agilent Technologies

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

How does the reader know if something is "specifically targeted"

SuggestedRemedy

Change "specfically targeted ...." to "the requirement includes an explicit statement that it only applies to one implementation."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.2** *P* **19** *L* **41** # **704**

Thaler, Pat Agilent Technologies

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

"Must" should be "shall".
In IEEE standards speak, "must" is used only for an inevitable consequence (and that usage tends to occur rarely). "Shall" is used when stating a requirement.

See also 33.2.5 and 33.2.5.2.

SuggestedRemedy

Change "must" to "shall".

Do a global search for must. and determine for each whether it should be shall.

Consider deleting the sentence in 33.2.5 because saying:
"X shall meet the following requirements" doesn't add anything.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The specific case cited has been changes.
Other "musts" are being evaluated separately.

Cl **33** *SC* **33.2.2** *P* **19** *L* **42** # **739**

Jonathan Thatcher World Wide Packets

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

You can't possibly mean that 1000BASE-T is beyond the scope of the Ethernet standard!

SuggestedRemedy

Remove or write what you do mean.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change sentence:
"The operation of midspan PSE at 1000BASE-T is considered beyond the scope of this standard."

Cl **33** *SC* **33.2.3** *P* **19** *L* **42** # **441**
Brown, Kevin C. Broadcom

Comment Type **TR** *Comment Status* **A** *PSE MDI*

Sentence incorrectly states that "1000BASE-T is beyond the scope of this standard.

SuggestedRemedy

rephrase:

" ; operation of a midspan PSE with 1000BASE-T systems is beyond the scope of this standard."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.4** *P* **20** *L* **11** # **741**
Jonathan Thatcher World Wide Packets

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

Figure 33.5 and 33.6 should both show the Vclass and Iclass points.

SuggestedRemedy

Add

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

We are adding classification circuit drawings.

Cl **33** *SC* **33.2.4** *P* **20** *L* **12** # **43**
McCormack, Michael 3Com

Comment Type **TR** *Comment Status* **A** *PSE validation circuit*

The figures 33.5 & 33.6 use a term 'P-' and 'P+' that are not defined elsewhere.

SuggestedRemedy

Change P- to Vdetect- and P+ to Vdetect+

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.4** *P* **20** *L* **50** # **399**
Darshan, Yair PowerDsine

Comment Type **T** *Comment Status* **A** *PSE validation circuit*

We agreed to change the 500nF value to 520nF to allow 10% tolerance for nominal 470nF value.

SuggestedRemedy

Change to 520nF.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.4** *P* **20** *L* **7** # **714**
Thaler, Pat Agilent Technologies

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

I can't find an explicit statement of where this test is applied. Are P+ and P- meant to represent the negative Vport and positive Vport?

SuggestedRemedy

Define P+ and P- or use an already defined term in place of them.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 43.

Cl **33** *SC* **33.2.4.1** *P* **21** *L* **10** # **42**
McCormack, Michael 3Com

Comment Type **TR** *Comment Status* **A** *PSE validation circuit*

The probe voltage polarity is not defined

SuggestedRemedy

Add a sentence 'The polarity of Vdetect must match the polarity of Vport as defined in section 33.2.1'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.4.1** *P* **21** *L* **8** # **180**

Turner, Ed — Lattice Semiconductor

Comment Type **T** *Comment Status* **A** *PSE validation circuit*

'10uS' incorrectly has a capital S (which is siemens) when I think the intent is for seconds (small s). Also, there is no space between the '10' and the 'uS'. I've made this technical since my proposed change will alter the unit being specified.

SuggestedRemedy

Change '10uS' to '10 us' (where the u is the micro symbol).
This also occurs in many places elsewhere in the document and applies to instances of 'mS' which should be 'ms'. Rather than submit a comment for each instance, perform a global search and replace to fix it everywhere.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.5** *P* **21** *L* **12** # **519**

Grow, Robert M. — Intel

Comment Type **TR** *Comment Status* **A** *PSE detection of PDs*

Subsections 33.2.5 through 33.2.7 are fragmented and the sections hierarchies make no sense. The detection and rejection criteria provide for a significant gap. It is not clearly stated what happens when a measurement falls between the criteria. The protocol description is scattered, difficult to read and in some cases contradictory.

SuggestedRemedy

Reorder and integrate 33.2.5 through 33.2.7 as a single protocol description of a state machine description for PSE detection of PDs. Include class detection in a single machine, or supply a subordinate state machine for each of the class detection alternatives. All parameters should then be defined in a single subsection preceding the state machine description.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **33** *SC* **33.2.5.1** *P* **21** *L* # **377**

Booth, Brad — Intel

Comment Type **TR** *Comment Status* **A** *PSE detection of PDs*

There is no shall statement to indicate that bullets a) to d) need to be met. The shall only applies to probing the link for PDs with a valid signature.

SuggestedRemedy

Change second sentence to read "A PSE shall detect a link as having a valid signature if it exhibits all the following characteristics:"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 518.

Cl **33** *SC* **33.2.5.1** *P* **21** *L* **16** # **518**

Grow, Robert M. — Intel

Comment Type **T** *Comment Status* **A** *PSE detection of PDs*

Misplaced shall and awkward construction.

SuggestedRemedy

Replace initial paragraph with: "The PSE probes the link in order to detect a valid PD signature. A PSE shall accept as a valid signature, a link with all the folowing characteristics:"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.5.1** *P* **21** *L* **19** # **520**

Grow, Robert M. — Intel

Comment Type **TR** *Comment Status* **A** *PSE detection of PDs*

The specification is ambiguous about which pairs. Is the requirement between all combinations of pair, or only between the power pairs?

SuggestedRemedy

Clarify which is the requirement, both on the referenced line and for a) and b) of the rejection criteria.

Proposed Response *Response Status* **C**

ACCEPT.

Will fix in Section 33.2.1.

Cl **33** *SC* **33.2.5.1** *P* **21** *L* **19** # **708**

Thaler, Pat — Agilent Technologies

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

The requirements here seem to imply that a midspan PSE can only support a single PD; that is, there can't be a case where a midspan PSE powered both DTEs on the link.

SuggestedRemedy

If the assumption above is accurate, it should be explicitly stated. If not, then the impedence for detection will need to allow for two PDs in parallel. (For 10BASE-T and 100BASE-T, a midspan PSE could deal with each PD separately, because the spare lines don't need to be connected through the PSE, but for 1000BASE-T the pairs can not be interrupted.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
A PSE may only power a single PD.

Create a new figure:
Copy and mirror Figure 33.3 with a note that both PSEs may be in the same piece of equipment, and add PDs to the figure.

Create a term "link section" and correct the document to refer to this term and not "link segments," etc.

5/15/02 Update: The response was reconsidered at the Las Vegas interim. Figure 33.3 was revised and the "mirrored" alteration containing two PSEs is no longer considered necessary.

Cl **33** *SC* **33.2.5.1** *P* **21** *L* **19** # **172**

Dwelley, Dave — Linear Technology

Comment Type **T** *Comment Status* **A** *PSE detection of PDs*

PSE detect resistance range severely limits possible test currents/voltages when diode drops and temperature are factored in. 19k implies 95k leakage in cable since PD must be 23.75k min. Cable will not leak that much!

SuggestedRemedy

Change minimum PSE detect resistance from 19k to 22k (allows 300k cable leakage). Must also change annex, p.45, figures A.1 and A.2.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change 33.2.4.1: . . . a one-volt difference between . . .

Cl **33** *SC* **33.2.5.1** *P* **21** *L* **20** # **400**

Darshan, Yair — PowerDsine

Comment Type **T** *Comment Status* **A** *PSE detection of PDs*

Capacitance during detection:
The number should consist of the following components:
PD input cap = 110nF max. (100nF nominal + 10% tolerance)
Cable capacitance which is 10nF max (pair to pair mode)
Total 120nF

SuggestedRemedy

Change from 110nF to 120nF

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.5.1** *P* **21** *L* **21** # **616**

Brikovskis, Rhett — Lantern Communicatio

Comment Type **T** *Comment Status* **A** *PSE detection of PDs*

What is the "offset voltage" and "offset current" that is part of a valid signature?

If this is the voltage difference described in section 33.2.4.1 using two different Vdetect levels, it has already been required that the PSE must be able to create a 2V voltage difference with a valid signature. This is no longer a link signature requirement--it's already been made a PSE detection requirement.

SuggestedRemedy

Clarify "offset voltage" and "offset current", or remove these if they refer to already mandated PSE requirements.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add note to clarify, with examples.

Cl **33** *SC* **33.2.5.1** *P* **21** *L* **21** # **41**

McCormack, Michael — 3Com

Comment Type **T** *Comment Status* **A** *PSE detection of PDs*

Items C and D in the list do not properly convey the desired meaning, that there may be an offset that must be accomidaited.

SuggestedRemedy

Change 'of at least' to 'of up to' in items C and D

Proposed Response *Response Status* **C**

ACCEPT.

Make change but use "tolerate".

Cl **33** *SC* **33.2.5.1** *P* **21** *L* **21** # **707**

Thaler, Pat — Agilent Technologies

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

Requirement c seems to be circular since the PSE is required to use Vdetect values that will produce a 2 Volt difference given the resistance. I don't understand the utility of requirement d. A 2 volt difference across a 19K to 26.5K resistance should change current by 75 to 105 uA.

Also, why is the "and" at the end of b rather than c?

SuggestedRemedy

Delete c and d.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution of comments 41 and 318.

But we are not removing c) and d).

Cl **33** *SC* **33.2.5.2** *P* **21** *L* **26** # **448**

Paul Nikolich — self

Comment Type **T** *Comment Status* **A** *PSE detection of PDs*

"The PSE must reject as invalid signature links which exhibit any of the following characteristics:"

In the above "must" should be replaced with "shall"

SuggestedRemedy

see above

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 378.

Cl **33** *SC* **33.2.5.2** *P* **21** *L* **26** # **378**

Booth, Brad — Intel

Comment Type **TR** *Comment Status* **A** *PSE detection of PDs*

No conformance requirement on the rejection criteria.

SuggestedRemedy

Change first sentence to read: "The PSE shall reject links as having an invalid signature when those links exhibit any of the following characteristics:"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.5.3** *P* **21** *L* **30** # **401**

Darshan, Yair — PowerDsine

Comment Type **T** *Comment Status* **D** *PSE detection of PDs*

The rejection criteria specifies that if the PD capacitance is more than 10uF than the PD signature should be rejected.
10uF is too much.
Reason: We allowed up to 110nF at the PD input as part of a valid signature.
Thus 10 times above this number, which is 1uF, can be considered as must reject.
10uF is 100 time more and is not required.
In addition, using 1uF as reject criteria will increase the detection reliability by allowing detection of long time constant and using it as a rejection criteria.
For example: if we will use 120uA as the detecting current than for 9.9uF we will need t=CV/I=9.9uF*10V/120Ua=~1sec which is much higher than the detection time = 500mS , and 9.9uF is "not must reject".
If 1uF will be the number, the time constant is =~100ms, which is within the detection timing range and can allow rejection within reasonable time (<500ms)

SuggestedRemedy

Change from 10uF to 1uF at line 30.
In addition, change in page 29 table 8 line 49 the value to 1uF.

Proposed Response *Response Status* **Z**

Cl **33** *SC* **33.2.5.3** *P* **21** *L* **32** # **382**

Booth, Brad — Intel

Comment Type **TR** *Comment Status* **A** *detection/classification timing*

This information is repeated in 33.2.7 and should be moved to that section.

SuggestedRemedy

Merge first sentence of 33.2.5.3 and 33.2.7 to read "A PSE shall operate in a mode such that it can complete the following within a time interval, ton_nominal, after a PD is attached to on of the PSE's ports:"

Insert a new bullet after bullet a) to read "complete classification (if implemented) of the PD,"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change title of section to "other criteria."

Move items d) and e) to 3.2.7.

Retain item f).

Cl **33** *SC* **33.2.5.3** *P* **21** *L* **34** # **380**
Booth, Brad Intel

Comment Type **TR** *Comment Status* **A** *detection/classification timing*
Duplication of shall.

SuggestedRemedy
Remove "The PSE shall" from each bullet sentence.

Proposed Response *Response Status* **C**
ACCEPT.

Cl **33** *SC* **33.2.5.3** *P* **21** *L* **36** # **617**
Brikovskis, Rhett Lantern Communicatio

Comment Type **TR** *Comment Status* **A** *detection/classification timing*
Timing criteria is specified, but not in relation to any signal or event. Do these events apply after power-up, after initiating detection, etc?

SuggestedRemedy
Specify the what the timing is specified in relation to.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See comments 675 and 382.

Cl **33** *SC* **33.2.5.3** *P* **21** *L* **36** # **675**
NAKAMURA, KARL CISCO SYSTEMS

Comment Type **T** *Comment Status* **A** *detection/classification timing*
concern that the 500ms detection number is not testable so make it informative

SuggestedRemedy
add the word informative spec or fix the untestable spec

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

The PSE must complete probing for a valid signature in less than 500 ms.

Cl **33** *SC* **33.2.5.3** *P* **21** *L* **36** # **712**
Thaler, Pat Agilent Technologies

Comment Type **TR** *Comment Status* **A**
Does the classification step come out of the 500 ms or the 400 ms? How fast can the 5 steps of the PSE classification method be completed?

SuggestedRemedy
Clarify the relationship of this requirement to classification.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See comment 382.

Cl **33** *SC* **33.2.5.3** *P* **21** *L* **36** # **471**
Thompson, Geoffrey O. Nortel

Comment Type **T** *Comment Status* **A** *detection/classification timing*
[assume comment type "approve (technical)]
The line: "d) The PSE shall complete detection of a valid signature in less than 500ms." seems to be in conflict with both the note below and with pg 19, line 50 (33.2.3, para 2)

SuggestedRemedy
d) The complete PSE detection cycle, when executed, shall not exceed 500 ms."

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See comment 675.

Cl **33** *SC* **33.2.5.3** *P* **21** *L* **36** # **522**
Grow, Robert M. Intel

Comment Type **TR** *Comment Status* **A** *detection/classification timing*
The timing numbers are inconflict with 33.2.7. Ton_nominal is one second yet requrements d) and e) sum to be less than the nominal power on time.

SuggestedRemedy
Make them consistent.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

Add reference to optional classification.

Cl **33** *SC* **33.2.5.3** *P* **21** *L* **37** # **646**
karam, roger cisco

Comment Type **T** *Comment Status* **R** *detection/classification timing*

THE PSE shall turn on power after a valid detection in less than 400ms

SuggestedRemedy

THe PSE shall turn on power after a valid detection in less than 1sec

Proposed Response *Response Status* **C**

REJECT.
TF vote: approve 6 reject 13 abs 1

Cl **33** *SC* **33.2.6** *P* **21** *L* **53** # **622**
Brikovskis, Rhett Lantern Communicatio

Comment Type **TR** *Comment Status* **A** *PSE classification of PDs*

It's not clear whether any preceding requirements from PD detection apply to PD classification.

- Why is there no PD classification equivalent circuit, as there was with PD detection?
- Are the specs for PD detection, such as max capacitance, voltage rise and fall times, etc, applicable to PD classification?

SuggestedRemedy

- Clarify that PD classification requires an additional set of measurements using different voltage/current measurement parameters. Clarify what the measurement conditions are.
- Equivalent circuits like Fig 33.5 (though trivial), would clarify that a separate set of measurements is intended and what the voltage/current measurement points are. At least state that the detection circuits do not apply to classification.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Will revise and add a parameter table for input characteristics during classification and a behaviorial model.

5/15/02 update: Model is V-I figure.

Cl **33** *SC* **33.2.6.1** *P* **22** *L* **12** # **295**
Dawe, Piers Agilent

Comment Type **TR** *Comment Status* **R** *PSE classification of PDs*

An enforced minimum power of nearly half a Watt could contribute to global warming when many millions of mundane electrical appliances are connected this way.

SuggestedRemedy

Can the minimum be reduced? I guess this is linked with the 5 mA minimum current; can that be reduced? Compare the phone, where the standby current is microamps, or a leakage current (megohms, as 33.4.1).

Proposed Response *Response Status* **C**

REJECT.

Cl **33** *SC* **33.2.6.1** *P* **22** *L* **30** # **44**
McCormack, Michael 3Com

Comment Type **TR** *Comment Status* **A** *PSE classification of PDs*

The polarity of Vclass is not defined

SuggestedRemedy

Change 'Vclass between 15 and 20 volts' to read 'Vclass between 15 and 20 volts with the same polarity as defined for Vport in section 33.2.1'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.6.2** *P* **22** *L* **29** # **525**
Grow, Robert M. Intel

Comment Type **T** *Comment Status* **A** *PSE classification of PDs*

Is the maximum current less than 100 ma or 100 ma as indicated by table?

SuggestedRemedy

Rewrite to read: "...VClass within the range of 15 to 20 volts with current limited to 100 ma or less at its terminals."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.6.2** *P* **22** *L* **30** # **709**

Thaler, Pat — Agilent Technologies

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

"terminals" is not a defined word. What point of the PSE is "its terminals"?

I assume you did not use MDI because it doesn't apply to a midstream PSE.

SuggestedRemedy

Define a term for the line interface of a PSE that applies to both types of PSE.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.6.2** *P* **22** *L* **31** # **649**

karam, roger — cisco

Comment Type **T** *Comment Status* **A** *PSE classification of PDs*

Than 100ma at its terminals.
this worries me, is this number too high, if a PD has a problem and at 20v it takes 100ma ? what happens?
i would like this revisited.... Also we do not mention the XXms Maximum classification time in here?!

SuggestedRemedy

than 50ma at its terminals.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Will specify maximum time for classification probe of 75 ms.

Cl **33** *SC* **33.2.6.2** *P* **22** *L* **40** # **404**

Darshan, Yair — PowerDsine

Comment Type **T** *Comment Status* **A** *PSE classification of PDs*

[Table 3] Table 3 specifies the measured current when a voltage of 15-20V is applied to the PD.
If the measured current is 35mA-43mA we know that we are in class 4
However if the current is between 47mA to 100mA we know that we have short circuit or other type of fault and not Class 0.

SuggestedRemedy

Change the wording in lines 40-42 from " Default to Class 0"
to " Fault condition"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Will change to be "PSE may default to class 0 or not power the PD."

Cl **33** *SC* **33.2.6.3** *P* **23** *L* **1** # **563**

Burton, Scott — Mitel Networks

Comment Type **T** *Comment Status* **R** *PSE classification of PDs*

The presence of two classification methods may be an unnecessary complication in the standard. The measured current method seems to offer clear implementation and integration advantages over the measured voltage method. For example it requires only one measurement be taken whereas with the measured voltage method "Voltage measurements from several applied currents may be necessary to classify a PD." [page 23 line 22]. Unless the IC vendors will be providing PD ICs that support both schemes this requirement may hinder the adoption of classification in the PD.

SuggestedRemedy

Eliminate the measured voltage method for classification.

Proposed Response *Response Status* **C**

REJECT.

TF vote: both:14 measured current: 3 measured voltage:0

Cl **33** *SC* **33.2.6.3** *P* **23** *L* **18** # **406**

Darshan, Yair — PowerDsine

Comment Type **T** *Comment Status* **A** *PSE classification of PDs*

[Table 4] Table 4 specifies Iclass and the voltage that should be detected accordingly. PD. If Iclass is 43mA-47mA and the voltage is >20V (and the previous conditions where checked) we know that we are in class 4
However if the current is between 43mA to 100mA and the voltage is below 15V, we know that we have short circuit or other type of fault and not Class 0.

SuggestedRemedy

Change the wording in lines 18-19 from " Default to Class 0"
to " Fault condition"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Will change to be "PSE may default to class 0 or not power the PD."

Cl **33** *SC* **33.2.6.3** *P* **23** *L* **22** # **280**

Dawe, Piers Agilent

Comment Type **TR** *Comment Status* **A** *PSE classification of PDs*

Do you mean that for e.g. Class 2, both V(13 to 16 mA) and V(21 to 25 mA) must be satisfied? Or just one?

SuggestedRemedy

Whichever, make it clear.

If it helps, you could draw out the whole table, current on one axis, voltage on the other, classification at the intersections.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

We are rotating this table to make it clearer.

Cl **33** *SC* **33.2.6.3** *P* **23** *L* **22** # **623**

Brikovskis, Rhett Lantern Communicatio

Comment Type **T** *Comment Status* **R** *PSE classification of PDs*

Text indicates that measurements with several applied voltages may be needed. Why?

SuggestedRemedy

Clarify why multiple measurements are needed or delete the sentence.

Proposed Response *Response Status* **C**

REJECT.

Sentence refers to currents, not voltages.

Cl **33** *SC* **33.2.6.3** *P* **23** *L* **22** # **526**

Grow, Robert M. Intel

Comment Type **T** *Comment Status* **R** *PSE classification of PDs*

It appears there is an assumed (unstated) order of performing the measured voltage method.

SuggestedRemedy

Either describe the assumed test sequence (strongly preferred) or the precedence rules for determination of class.

Proposed Response *Response Status* **C**

REJECT.

There is no assumed sequence.
Sequence will not affect the outcome.

Cl **33** *SC* **33.2.6.3** *P* **23** *L* **3** # **405**

Darshan, Yair PowerDsine

Comment Type **T** *Comment Status* **D** *PSE classification of PDs*

Iclass should be limited to 100mA as it was limited in the 1st classification method as described in table - 3

SuggestedRemedy

Change line 3 from "".....to less than 47mA...""
to ".... to less than 100mA"
In addition, change line 11 in table 4, right column from " 43 to 47mA"
to " 43mA to 100mA"

Proposed Response *Response Status* **Z**

Cl **33** *SC* **33.2.6.3** *P* **23** *L* **4** # **45**

McCormack, Michael 3Com

Comment Type **TR** *Comment Status* **A** *PSE classification of PDs*

Polarity of VClass is not defined

SuggestedRemedy

Change 'Vclass limited to be less than 30 volts' to read 'Vclass limited to be less than 30 volts with the same polarity as defined for Vport in section 33.2.1'

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.7** *P* **23** *L* **25** # **171**

Dwelley, Dave Linear Technology

Comment Type **TR** *Comment Status* **A** *detection/classification timing*

Spec does not mention maximum classification time (to avoid burning up PD)

SuggestedRemedy

Add new line to 33.2.7: The PSE shall apply classification test voltages or currents for no more than 75ms. Duty of classification test voltage/current shall be less than 5%.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Set to 75 ms in other comment

Cl **33** *SC* **33.2.7** *P* **23** *L* **26** # **715**

Thaler, Pat — Agilent Technologies

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

3.2.3 states that the time between PD detection attempts is not specified and also that the PSE can choose to not apply power when it has detected a PD. The requirement here seems to conflict with that statement. Also, given that, what is the point of saying that the requirement of 33.2.7 doesn't apply in some cases and does apply in other cases in 33.2.7.1?

SuggestedRemedy

Make the timing requirements consistant.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 624.

Cl **33** *SC* **33.2.7** *P* **23** *L* **26** # **711**

Thaler, Pat — Agilent Technologies

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

This doesn't seem to mean anything. There is no criteria for when the PSE shall be able to operate in the mode where it meets the 1 second limit so if the PSE doesn't meet it, then the supplier can always say "It wasn't in the 1 second mode." Also, it is not clear how this spec relates to the timing criteria in 33.2.5.3

SuggestedRemedy

Delete this or change it so it means something. Also, clarify its relationship to 33.2.5.3 or, better yet, combine them into one timing spec.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 624.

Cl **33** *SC* **33.2.7** *P* **23** *L* **26** # **624**

Brikovskis, Rhett — Lantern Communicatio

Comment Type **T** *Comment Status* **A** *detection/classification timing*

Text is confusing. Text appears to say that a PSE must meet power-up timing, unless it can't meet power-up timing. Is it intended to be vague? It also refers to modes, which appear to be implementation specific, when discussing timing.

SuggestedRemedy

Clarify under exactly what conditions the timing requirement exists--which appears to be when a compliant PD is attached to a PSE port after power-up. Then state that a PSE does not have to meet timing under other conditions. There doesn't appear to be any need to discuss "modes".

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

First paragraph:
replace with:
"If a PSE is going to apply power, it shall be within one second after the start of a detection/classification cycle."

Second paragraph: remove "in other modes"

Cl **33** *SC* **33.2.7** *P* **23** *L* **27** # **679**

NAKAMURA, KARL — CISCO SYSTEMS

Comment Type **T** *Comment Status* **A** *detection/classification timing*

ton_nominal, which shall be less than 1 second
a lot of folks apparently may have software issues that require the extra time - so this is a max number ...

Since we Rely on Link to remove power, we need this Number increased.

SuggestedRemedy

ton_nominal, which shall be less than 3 seconds

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

ton_nominal, which shall be less than 1.01 seconds

Cl **33** *SC* **33.2.7** *P* **23** *L* **27** # **682**
DIAB, WAEL William CISCO SYSTEMS

Comment Type **T** *Comment Status* **A** *detection/classification timing*

ton_nominal, which shall be less than 1 second
since we rely on link for power removal, increasing this makes sense at this point...

SuggestedRemedy

ton_nominal, which shall be less than 4 seconds

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 679

Cl **33** *SC* **33.2.7** *P* **23** *L* **27** # **650**
karam, roger cisco

Comment Type **T** *Comment Status* **A** *detection/classification timing*

ton_nominal, which shall be less than 1 second
a lot of folks apparently may have software issues that require the extra time - so this is a max number ...

SuggestedRemedy

ton_nominal, which shall be less than 1.5 second

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 679

Cl **33** *SC* **33.2.7.1** *P* **23** *L* **41** # **408**
Darshan, Yair PowerDsine

Comment Type **T** *Comment Status* **A** *PSE detection of PDs*

I received comments that using "class 0 detection" is confusing.

SuggestedRemedy

To use "detection" word for detection only and "classification" word for classification only.
Thus line 41 should be changed from:
"After a PSE that is performing Class 0 detection using ..."
to:
"After a PSE that is performing detection using ..."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.7.1** *P* **23** *L* **44** # **407**
Darshan, Yair PowerDsine

Comment Type **T** *Comment Status* **A** *detection/classification timing*

Keep consistent with the Ton_nominal as defined in paragraph 33.2.7

SuggestedRemedy

Change line 41 from "from the overall detection timing specified in 33.2.7"
to "from meeting Ton_nominal requirement specified in 33.2.7"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

In last sentence, ". . . the alternative B PSE . . ."

Cl **33** *SC* **33.2.7.1** *P* **23** *L* **50** # **625**
Brikovskis, Rhett Lantern Communicatio

Comment Type **T** *Comment Status* **A** *detection/classification timing*

Timing appears contradictory:

PSE is given 500 msec for detection and 400 msec for power-up (33.2.5.3). The text here suggests that in the event of a failure due to contention between two devices, the detection process must be repeated, but the overall timing is still 1 sec (33.2.7).

SuggestedRemedy

Clarify whether the timing for a device implementing alternative A is more stringent than what is described in 33.2.5.3.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add: Any subsequent attempt by the alternative A PSE to detect is subject to the timing requirement of section 33.2.7.

Cl **33** *SC* **33.2.8** *P* **24** *L* **10** # **628**

Brikovskis, Rhett — Lantern Communicatio

Comment Type **T** *Comment Status* **A** *PSE output requirements*

Multiple problems with "notes" in table:

Page 24, line 10--what line, load, and temperature conditions are specified?

Page 24, line 28--"limits meant" should be "limits are meant"

Page 25, line 8--refers to a current limit of 350 mA under some conditions, but this is the max current anyway. What is intended by the note?

Page 25, line 18--"wave form" should be "waveform"

Page 25, line 19--Does "Ip" refer to Ipeak or Iport?

Page 25, line 25--How can the RMS, DC, and ripple currents be "bounded" by an equality? Not clear what is intended here.

Page 25, line 27--What is the duty cycle being referenced in the inrush spec?

SuggestedRemedy

Correct the notes in the table.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Page 24, line 10--what line, load, and temperature conditions are specified?
Ans: add: (implementation specific), remove "load"

Page 24, line 28--"limits meant" should be "limits are meant"
Ans: change to "limits are meant"

Page 25, line 8--refers to a current limit of 350 mA under some conditions, but this is the max current anyway. What is intended by the note?
Ans: Maximum power at the PSE is fixed at 15.4 watts, so current must decrease with increasing voltage

Page 25, line 18--"wave form" should be "waveform"
accept

Page 25, line 19--Does "Ip" refer to Ipeak or Iport?
Accept Ipeak

Page 25, line 25--How can the RMS, DC, and ripple currents be "bounded" by an equality? Not clear what is intended here.
Ans: change 'bounded" to "related"

Page 25, line 27--What is the duty cycle being referenced in the inrush spec?
Ans: change to: "Duty cycle of the inrush current waveform is 5% min."

Cl **33** *SC* **33.2.8** *P* **24** *L* **13** # **495**

Gentry, Denton — Dominet Systems

Comment Type **T** *Comment Status* **A** *PSE output requirements*

In Table 5, Item 2.a., a minimum of 44 and maximum of 57 are specified but no unit is listed. I believe these are voltages, specifying that the voltage must remain between 44 and 57 volts so long as the rate of current change is less than 35 mA/usec. On the other hand, I might be hopelessly confused.

SuggestedRemedy

Add "VDC" to the unit column.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.8** *P* **24** *L* **17** # **419**

Darshan, Yair — PowerDsine

Comment Type **T** *Comment Status* **A** *PSE output requirements*

[Table 5] Item 2-b, NOTES column:
I got a comment that it is not clear that the 0.3Ohm requirement refers to a single port environment.
Reason:
If the PSE port power supply was a 15.4W power supply with 0.3 Ohm.. it is OK
If the PSE port power supply was 300W power supply and under single load of 15.4W it was 0.3 ohm it is still OK so it doesn't matter what kind of power supply you connect as long as it is 15.4W min and you load it with a single 15.4W load while the other ports are disconnected.
In addition we should add additional comment that emphasis that we need to specify a setup that extract the PSE power supply output impedance out of port output impedance measurements.

SuggestedRemedy

Add additional note to the NOTES column at item 2b after line 20 that says:
c) In a multi-port system, the requirement should be met for a single port loaded with 15.4W while all other ports are disconnected.
In addition add "a)" to the beginning of line 17 and "b) to the beginning of line 18.
The final changes should look like:
a) From DC to....."
b) Note that it is not ..."
c) In a multi-port system, the requirement should be met for a single port loaded with 15.4W while all other ports are disconnected.
d) See TBD setup in order to extract the PSE power supply output impedance out of port output impedance measurements.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Yair to supply draft of "TBD setup in order to extract the PSE power supply output impedance".

Cl **33** *SC* **33.2.8** *P* **24** *L* **17** # **716**

Thaler, Pat — Agilent Technologies

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

Where is the PSE power supply output? The PSE has only one defined interface and output power can't be tested at some undefined internal point.

SuggestedRemedy

Write a spec that applies to the PSE output port.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Power ad hoc is doing this.

Cl **33** *SC* **33.2.8** *P* **24** *L* **21** # **698**

George Oughton — Invensys

Comment Type **T** *Comment Status* **X** *PSE output requirements*

[Table 5 , lines 21-37] Comment:Impedance to ground needs to be clearly specified as a test conditin.Is it 49.9 ohms as in Fig 33.9?
Where is the 1500V for 60 seconds applied in 33.4.1? If it is across the 49.9 ohms then 45000 watts result.
Stray / parasitic capacitance will produce leakage currents from the bulk source of 48V power (at both powerline and conversion frequencies). These will flow into that common mode impedance to ground. If the impedance is very high (>2meg)it will be difficult to achieve the low common mode noise voltages.
I am not familiar with what is common industry practice for such shunting impedances - help me out, maybe i'm missing something.

SuggestedRemedy

Specify test impedance for 33.2.8, table 5.

Proposed Response *Response Status* **Z**

Cl **33** *SC* **33.2.8** *P* **24** *L* **23** # **717**

Thaler, Pat — Agilent Technologies

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

What is the meaning of "common mode and/or differential noise pair to pair values"? This should have a text paragraph rather than just a table note. Also, the meaning of part a is not entirely clear. Does it mean that the requirement does not apply to a DTE PSE which is using alternative B and not running 1000BASE-T? If it is a midspan PSE, does it always have to meet this requirement (because a midspan PSE doesn't know if the link is 1000BASE-T)?

SuggestedRemedy

Clarify.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

We are adding a figure to 33.4.6
to help describe this parameter,
and the table notes are being reworded.

Cl **33** *SC* **33.2.8** *P* **24** *L* **25** # **661**

karam, roger — cisco

Comment Type **T** *Comment Status* **A** *PSE output requirements*

a) applicable when feeding through signal carrying pairs
well revisit my noise Data from the July 2000 meeting for Link integrity due to noise and you will find the noise spec applies to both signal and spair pairs!

SEE SLIDE 91 at
http://www.ieee802.org/3/af/public/jul00/karam_1_0700.pdf

SuggestedRemedy

a) applicable when feeding through any pair carrying power (alternative A or B)

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.8** *P* **24** *L* **25** # **409**

Darshan, Yair — PowerDsine

Comment Type **T** *Comment Status* **A** *PSE output requirements*

[Table 5] The noise requirement is applicable for all PSE alternatives (a and b).
Thus note (a) in item 3 should be deleted.
In addition, the noise and ripple requirements should be specified for the nominal Vport as defined in item 1 and for all operating load range (0.44W-15.4W)

SuggestedRemedy

1. Delete note (a) from item 3
2. Add note (a) as follows: a) from 0.44W to 15.4W at operating Vport.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Make addition as "c)".

Cl **33** *SC* **33.2.8** *P* **24** *L* **3** # **743**

Jonathan Thatcher — World Wide Packets

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

There is no information regarding how, where, and under what conditions the testing and conformance of table 5 is to be completed. Without these, the specifications are ambiguous. Compliance may or may not be assured.

SuggestedRemedy

Clearly specify testing requirements and conditions.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Will add test criteria/fixtures.

Cl **33** *SC* **33.2.8** *P* **24** *L* **30** # **719**

Thaler, Pat — Agilent Technologies

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

These limits allow noise that is 50 mV but that is higher than 1000BASE-T is required to withstand. 40.6.1.3.4 requires that 1000BASE-T withstand 25 mV peak-to-peak of alien noise. Power supply noise injected across a pair presumably falls into that class - i.e. it isn't transmit or receive data dependent. 50 mV may also be higher than the noise tolerance of 100BASE-TX - I don't have the FDDI spec at hand to check. Also, there is no spec provided above 100 MHz. I can't find a requirement for low pass filtering in 1000BASE-TX. 100BASE-TX implementations often use considerable excess bandwidth and would be sensitive to noise above 100 MHz.

Also, it isn't clear what the low frequency cut off of a 1000BASE-T transceiver is. 150 mV at 500 KHz may be too much.

SuggestedRemedy

Reduce the differential noise level to below that which 1000BASE-T is required to withstand. This may need to be less than 25 mV to allow for other external noise sources. Extend the upper frequency range to cover to at least 200 MHz.

Proposed Response *Response Status* **C**

REJECT.

This section describes common mode and differential voltage pair to pair whereas the comment points to a single-pair differential mode noise spec..

Table 40B-1specifies common-mode voltages greater than in this section .

Cl **33** *SC* **33.2.8** *P* **25** *L* **27** # **164**

Dwelley, Dave — Linear Technology

Comment Type **TR** *Comment Status* **R** *PSE output requirements*

Table 5, item 5: output current specs in startup and fault modes are confusing, and specs are too tight to meet reliably if standard 500ppm 1% resistors are used.

SuggestedRemedy

Change spec to read:
Output current limit
Change limits to:
5 and 10: min 400mA max 500mA note t <= 50ms, duty cycle <= 5%
8: min 350mA max 500mA note t >= 50ms, no duty cycle limit

Proposed Response *Response Status* **U**

REJECT.

vote accept: 10 reject: 10 (Raleigh)

At St. Louis:
vote to accept: Y:14 N:9 A:7 fails

Committee does not see clear cost benefit.

Cl **33** *SC* **33.2.8** *P* **25** *L* **5** # **412**

Darshan, Yair PowerDsine

Comment Type **T** *Comment Status* **A** *PSE output requirements*

[Table 5] TUDL was replaced by Tpmdo in item 6 and item 7.

SuggestedRemedy

Change "TUDL" in lines 5 , 8 and 10 with "Tpmdo"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.8** *P* **25** *L* **5** # **411**

Darshan, Yair PowerDsine

Comment Type **T** *Comment Status* **A** *PSE output requirements*

[Table 5] Item 4 specify the PSE output current range at Normal powering mode for PSE minimum output voltage.
The max. limit for Iport is 350mA for 44V.
For higher PSE output voltage, the max upper limit of the current should be lower in order to keep 15.4W PSE output power.
Hence the Max current should meet the following equation: Iport_max=15.4/Vport.

SuggestedRemedy

Change the following:
Item 4 comment a) line 5:
Change the note to "Iport_max for Vport>44V is Iport_max=15.4/Vport [ADC]. Iport_max must be guaranteed by PSE in order to ensure 15.4W min output power"
Item 4 comment b) line 15:
Add to the end of the line: "For Vport>44V, Irms max=15.4/Vport [Arms]"
Item 4 comment c) line 20:
Change from "Ip=0.4A .....duty cycle"
to "Ip=0.4A .....duty cycle. For Vport>44V, Ip=17.6/Vport [Ap]

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.8** *P* **26** *L* **10** # **653**

karam, roger cisco

Comment Type **T** *Comment Status* **A** *Power Removal*

TPMDO 300ms 400ms
for link to work and we will share the info with all, the ieee spec calls for 1.5sec timeout on Autonegotiation, so we are looking at a new set of rules here, the max must change.

SuggestedRemedy

TPMDO 400ms 4sec (min=400msec max=4sec)

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The TF feels the proposed timing is not ideal but is required for link based disconnect. An alternative method of power disconnect is proposed that would use a heartbeat in the PD that would satisfy the timing requirements.

vote: Y:9 N:5 A:3.
Fails.

At St. Louis: By motion to accept in principle.

See resolution of comment 678.

Cl **33** *SC* **33.2.8** *P* **26** *L* **10** # **681**

DIAB, WAEL William CISCO SYSTEMS

Comment Type **T** *Comment Status* **A** *Power Removal*

TPMDO 300ms 400ms

the ieee spec calls for 1.5sec timeout on Autonegotiation, so we are looking at two phys that would require to agree on a speed, possibly may use next page, and other steps required to link up successfully.
more than one phy vendor quote a min of 3-4seconds.

SuggestedRemedy

please set
to allow prevention of motor boating when Link is used for power removal
TPMDO 400ms 4sec (min=400msec max=4sec)

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution of comment 678.

Cl **33** *SC* **33.2.8** *P* **26** *L* **10** # **678**

NAKAMURA, KARL CISCO SYSTEMS

Comment Type **T** *Comment Status* **A** *Power Removal*

TPMDO 300ms 400ms

for link to work and we will share the info with all, the ieee spec calls for 1.5sec timeout on Autonegotiation, so we are looking at a new set of rules here, the max must change.
remove power within 4sec
again this relates to the link issues, there is autonegotiation, next page and a lot more than one step to reach link!

SuggestedRemedy

TPMDO 400ms 4sec (min=400msec max=4sec)

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. Editor recommends Task Force withhold resolution of this comment
pending the evaluation of alternative methods.

Addressed by Motion 1 of 5/14/02.

Link disconnect has been removed from the document
and replaced by an AC disconnect method.

Vote to accept in principle: Y:26 N:0.

Cl **33** *SC* **33.2.8** *P* **26** *L* **11** # **654**

karam, roger cisco

Comment Type **T** *Comment Status* **A** *Power Removal*

less than 300ms duration
again we will share the link info

SuggestedRemedy

less than 400msec duration

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution of comment 678.

Cl **33** *SC* **33.2.8** *P* **26** *L* **14** # **655**

karam, roger cisco

Comment Type **T** *Comment Status* **A** *Power Removal*

remove power within 400msec
again this relates to the link issues

SuggestedRemedy

remove power within 4sec

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution of comment 678.

Cl **33** *SC* **33.2.8** *P* **26** *L* **19** # **166**

Dwelley, Dave Linear Technology

Comment Type **TR** *Comment Status* **A** *PSE output requirements*

Max time is awkward for 64ms +/-10% timer (binary multiple of 1ms clock)

SuggestedRemedy

Change max from 70 to 75ms

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Also change item 11.

Cl **33** *SC* **33.2.8** *P* **26** *L* **23** # **721**

Thaler, Pat Agilent Technologies

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

Why is Icut limited to less than 400 mA? What is the definition of a short load condition? There is no clear reason to separate out the overload and short detection

SuggestedRemedy

Delete note at 9. The note at 8 covers the requirement and the "may" at 9 appears to contradict the note at 8. Change the note at 8 to "If output current exceeds Icut for a duration greater than Tovld, the PSE shall disconnect the power from the port." Delete TLIM because it is covered by the overload spec in 8 and 9. 10 to "Output current limit" and change the note to "Max value of port current during any load including a short circuit." Delete the minimum value. It isn't needed.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

For Tovld < Tovld_min, the PSE shall not remove power.
For Tovld > Tovld_max, the PSE shall remove power.
Between, it may remove power. (Implementation specific)

Cl **33** *SC* **33.2.8** *P* **26** *L* **27** # **167**

Dwelley, Dave — Linear Technology

Comment Type **TR** *Comment Status* **A** *PSE output requirements*

Max time is awkward for 64ms +/-10% timer (binary multiple of 1ms clock)

SuggestedRemedy

Change max from 70 to 75ms

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.2.8** *P* **26** *L* **27** # **287**

Dawe, Piers — Agilent

Comment Type **TR** *Comment Status* **A** *PSE output requirements*

"If fault condition is detected" Does this include or exclude short load condition or is it optional?

SuggestedRemedy

Clarify, perhaps elsewhere in the document

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 415.

Cl **33** *SC* **33.2.8** *P* **26** *L* **30** # **651**

karam, roger — cisco

Comment Type **T** *Comment Status* **A** *PSE output requirements*

Table 5
Toff = 500ms max

again be my guest turn this off in no time, but when we added link to be explained we found all kind of issues that requires this max...

SuggestedRemedy

Toff = 1.5 sec Max

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change comment to explain that it is port discharge time.
No change to values.

Cl **33** *SC* **33.2.8** *P* **26** *L* **30** # **652**

karam, roger — cisco

Comment Type **T** *Comment Status* **A** *PSE output requirements*

item 12 in table 5
Trise min = 15us
i think based on 450ma and a 45v supply to round the numbers and a 1uf min in the PD a 15us trise may be too agressive unless we speced this without a load?? if we meant no load then we shall say so...
we may want to revisit...

SuggestedRemedy

Trise Min=150us

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.
.
No change in value.
Change to be a no-load test

Cl **33** *SC* **33.2.8** *P* **26** *L* **30** # **680**

DIAB, WAEL William — CISCO SYSTEMS

Comment Type **T** *Comment Status* **A** *PSE output requirements*

Table 5
Toff = 500ms max

again be my guest turn this off in no time, but when we added link to be explained we found all kind of issues that requires this max...

SuggestedRemedy

Set Toff= 1.5 seconds max

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change comment to explain that it is port discharge time.
No change to values.

Cl **33** *SC* **33.2.8** *P* **26** *L* **5** # **720**

Thaler, Pat — Agilent Technologies

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

TUDL doesn't seem to be defined anywhere. Also, I don't find any description of power off mode current 1 and power off mode current 2.

SuggestedRemedy

Define TUDL, power off mode current 1 and power off mode current 2.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

It is now Tpmdo.
Remove references to Tudl.

Cl **33** *SC* **33.2.8** *P* **26** *L* **7** # **165**

Dwelley, Dave — Linear Technology

Comment Type **TR** *Comment Status* **A** *Power Removal*

Spec is too tight for reliable disconnect detection with inexpensive components

SuggestedRemedy

Change max from 10mA to 20mA
(could alternately change min to 2mA (also line 5 max), or do both)

Must also change Table 12, item 2 to match if max is changed

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE. vote accept in principle first recommmendation: 10 reject: 8 abs: 3

vote accept in principle range change 5 to 11mA: acclamation

Cl **33** *SC* **33.2.9** *P* **26** *L* **43** # **631**

Brikovskis, Rhett — Lantern Communicatio

Comment Type **T** *Comment Status* **A** *PSE power supply allocartion*

The text requires a "power allocation algorithm", but no concise algorithm is described, and the text contains unnecessary information.

Also, it seems that additional thought is needed to better define PSE behavior under over-subscription. The existing text states that "no specific behavioral requirement" is placed on the device. If there are existing users connected to a device, there doesn't appear to be a requirement that would prevent the device from turning off one of the existing users to try to power the new connection. This sort of counter-intuitive behavior wouldn't make a device very user-friendly in the field.

SuggestedRemedy

Substitute the following condensed text for the entire section:

"It may be desirable to implement a PSE which does not contain a power supply capable of supplying maximum power to all devices that could be connected to it. In such a case, the PSE shall implement a power allocation mechanism to ensure that it does not attempt to provide power to a link if it is unable to supply the maximum power level specified by the PD's classification."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

"It may be desirable to implement equipment that does not contain a power source capable of supplying maximum requested power to all PSEs that are connected to it. In such a case, the PSE shall implement a power allocation mechanism to ensure that it does not attempt to provide power to a link if it is unable to supply the maximum power level specified by the PD's classification. Such a power allocation mechanism is beyond the scope of this standard."

Cl **33** *SC* **33.2.9** *P* **26** *L* **52** # **722**

Thaler, Pat — Agilent Technologies

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

The statement here contradicts the first paragraph. A specific behavior is required when the PSE approaches or reaches its maximum power subscription. The PSE is required not provide power to a link if it is unable to provide the maximum power level requested.

SuggestedRemedy

Delete the sentence and "Specifically,"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Last paragraph.

Change "specific" to "additional" in first sentence.
Strike "Specifically" in second sentence.

Cl **33** *SC* **33.2.9** *P* **26** *L* **53** # **474**

Thompson, Geoffrey O. Nortel

Comment Type **TR** *Comment Status* **A** *PSE power supply allocartion*

This is a single port specification. The sentence quoted is out of scope:
"Specifically, PSEs may or may not suspend detect on on additional MDI ports at the implementor's discretion."

SuggestedRemedy

Replace with:
"Specifically, the cross behavior to other PSEs related to additional MDI ports in the same equipment is beyond the scope of this standard."

(BTW, I believe a PSE is a single port device. I am talking here about a power supply with multiple PSEs. We need to be very clear about this. Perhaps we need to go back to the Entity Relationship Diagram and add a power supply object above the PSE with a one to many arrow.)

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

"Specifically, the interaction between one PSE and another PSE in the same equipment is beyond the scope of this standard."

Cl **33** *SC* **33.3** *P* **28** *L* **6** # **589**

John Jetzt Avaya, Inc.

Comment Type **T** *Comment Status* **A** *PD detection signature*

PD-capable devices that are not requesting power are covered in this clause, because they must present a non-valid signature

SuggestedRemedy

Change sentence to read:
"PD-capable devices that are neither drawing nor requesting power are also covered in this clause."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.3** *P* **31** *L* **5** # **431**

Darshan, Yair PowerDsine

Comment Type **T** *Comment Status* **D** *PD classification signature*

[Table 11] With 5-8mA at class 0 (25K resistor) the voltage will be much higher than 30V.

The current should be less than 30V/(25K + 5%) which is less than 30V/26.25K (1.26mA max). With 0.88mA to 1.14mA, 21V to 30V can be measured at PD input for 25K+/-5%.
From PSE point of view more factors need to be considered in order to determine the best current range.
Need John to clarify his original intention.

SuggestedRemedy

Need John to clarify his original intention.

Proposed Response *Response Status* **Z**

Cl **33** *SC* **33.3** *P* **34** *L* **6** # **428**

Darshan, Yair PowerDsine

Comment Type **T** *Comment Status* **A** *PD power supply limits*

[Table 12] In order not to be dependent on boundary conditions when PSE voltage is nominally adjusted to 44V, the PD turn on voltage should be a bit lower than 44V.

SuggestedRemedy

Item 6-a, line 5, column "Max." : Change from 44V to 42V.
Line 6, column "Notes" : Change from <=44V to <42V

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.3.1** *P* **28** *L* **16** # **16**

Brown, Benjamin AMCC

Comment Type **T** *Comment Status* **R** *PD MDI*

[lines 16-23] This text confuses me. I think what you want to say is that a PD must be capable of accepting power by both Mode A and Mode B but not by both modes simultaneously. If this is true, I would recommend the following changes (see suggested remedy). If this is not true then perhaps some clearer text is in order.

SuggestedRemedy

Replace the first sentence of the first paragraph with the following:

"Power can be supplied on either of two sets of MDI conductors."

Replace the entire second paragraph with the following sentence:

"The PD shall be capable of accepting power by both Mode A and Mode B but not by both modes simultaneously."

Proposed Response *Response Status* **C**

REJECT.

This would be a new requirement on the PD to specifically prevent accepting power over both pairs simultaneously which is undesirable.

The specification prevents the PSE from doing this.
Therefore we do not need to burden the PD.

Cl **33** *SC* **33.3.1** *P* **28** *L* **21** # **184**

Turner, Ed Lattice Semiconductor

Comment Type **T** *Comment Status* **A** *PD MDI*

Are modes A and B different from alternatives A and B specified in section 33.2.1 ?
The use of the word 'mode' instead of 'alternative' implies some sort of difference between the two. I didn't think there was, but am now unsure.

SuggestedRemedy

Consistently use either 'mode' or 'alternative' throughout the document. If there really is a need to differentiate between the PD and the PSE then use that as a qualifier.
For example, '.. PSE mode A ..', '.. PD mode B ..'.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Global change
'.. PSE alternative x ..', '.. PD mode x ..'.

Cl **33** *SC* **33.3.1** *P* **28** *L* **22** # **683**

Rich Graham Enterasys Networks

Comment Type **TR** *Comment Status* **A** *PD MDI*

"PDs which use Mode A and Mode B simultaneously for power are specifically not in compliance with this standard".

SuggestedRemedy

This line and any supporting matter should be eliminated. While this makes the standard simpler I believe it unnecessarily restricts the use of the other pair. While the standard may not support the simultaneous use it should not be restricted.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

"PDs that simultaneously require power from both Mode A and Mode B are specifically not in compliance with this standard."

However, power draw at the MDI aggregate must be 12.95 watts or less, and the PSE requirement not to supply both will remain.

Cl **33** *SC* **33.3.1** *P* **28** *L* **22** # **433**

Darshan, Yair PowerDsine

Comment Type **TR** *Comment Status* **A** *PD MDI*

It is wrong to specify that PD's that use Mode A and Mode B simultaneously for power are specifically not in compliance with this standard.
The reason is that PD's are forced to support processing power supplied by either mode.
In order to implement this requirement it is required from the PD to add addional hardware in order to identify the pairs with the higher voltage and switch off the other pairs.
Only the PSE is required not to use simultaneously Mode A and Mode B.

SuggestedRemedy

Delete lines 22-23 starting from "PDs which use..."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 683.

Cl **33** *SC* **33.3.1** *P* **28** *L* **49** # **168**

Dwelley, Dave — Linear Technology

Comment Type **TR** *Comment Status* **A** *PD MDI*

Unclear what non-auto-mdix PD must do

SuggestedRemedy

Change line to read "...however, the PD must be able to operate when the polarity is as shown in at least one column in Table 6."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change line to read "...however, the PD must be able to operate in at least one of the "PD mode A" columns and the "PD mode B" column in Table 6."

Cl **33** *SC* **33.3.1** *P* **28** *L* **49** # **725**

Thaler, Pat — Agilent Technologies

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

[none]

SuggestedRemedy

Change must to shall

Also, polarity insensitivity should be mandatory to maximize interoperability.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change "must" to "shall".

The committee has repeatedly covered the issue of mandatory polarity insensitivity, and has decided to leave it out.

Cl **33** *SC* **33.3.1** *P* **28** *L* **49** # **529**

Grow, Robert M. — Intel

Comment Type **T** *Comment Status* **A** *PD MDI*

Misplaced shall.

SuggestedRemedy

Change "must" in the first line of sentence to "shall", and "shall be" in the last line to "is".

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.3.1** *P* **28** *L* **52** # **726**

Thaler, Pat — Agilent Technologies

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

The shalls is not appropriate here because they do not apply to the PD. The PD does not control which pair is at a higher potential. Also, the statements aren't true for the way power is supplied when the PSE is an auto MDI-X.

SuggestedRemedy

Delete the last two sentences.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The three sentences starting at line 50 should be a separate paragraph, as they constitute a note.
The "shall" in the note becomes a "will".

Cl **33** *SC* **33.3.2** *P* **29** *L* **14** # **54**

McCormack, Michael — 3Com

Comment Type **TR** *Comment Status* **D** *PD detection signature*

This requirement contradicts numerous conversations that I was present for, that as long as a PD did not draw more than the maximum power from the MDI, it could load share, with any valid ration, between the two modes.

SuggestedRemedy

Strike the sentence.

Proposed Response *Response Status* **Z**

Cl **33** *SC* **33.3.2** *P* **29** *L* **24** # **294**

Dawe, Piers — Agilent

Comment Type **T** *Comment Status* **A** *PD detection signature*

"V-I Slope 2.7 -10.1V ... K[ohm]" Is the slope to be achieved at all voltages across the range (gradient) or by reference to the current at 2.7 and 10.1 V (chord)?

SuggestedRemedy

Please clarify.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Specify that is a measurement for any two-volt or greater chord.

Cl **33** *SC* **33.3.2** *P* **29** *L* **24** # **727**

Thaler, Pat — Agilent Technologies

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

Also line 46. V-I slope should be pair-to-pair resistance or, to be more consistant with the other items, input resistance.

There should be a statement associated with a table that the resistance, capacitance and inductance are between the two pairs.

Also, where is the Voffset and Ioffset measured? Are those also pair-to-pair?

SuggestedRemedy

Clarify.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

All three issues are related to the concept of "powered pairs", which is being added to the document.

We will add a definition of "V-I slope".

Cl **33** *SC* **33.3.2** *P* **29** *L* **28** # **657**

karam, roger — cisco

Comment Type **T** *Comment Status* **R** *PD detection signature*

Table 7
Ioffset 10ua

we agreed to 12ua see page 21 line 22

SuggestedRemedy

Ioffset 12ua

Proposed Response *Response Status* **C**

REJECT.

Two-microamps of guardband.

Cl **33** *SC* **33.3.2** *P* **29** *L* **29** # **417**

Darshan, Yair — PowerDsine

Comment Type **T** *Comment Status* **A** *PD detection signature*

[Table 7] If we add 10% tolerance to the 0.1uF value, we get 0.11uF.

SuggestedRemedy

Change from 0.1uF to 0.11uF at table 7 line 29

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Also, change conditions to be 2.7 to 10.1V throughout table.

Cl **33** *SC* **33.3.2** *P* **29** *L* **46** # **658**

karam, roger — cisco

Comment Type **T** *Comment Status* **X** *PD detection signature*

table 8
range of values > 45k or < 12k
what am I missing these numbers are 33k and 15k ?
per page 21 lines 27-32

SuggestedRemedy

range of values > 33k or < 15k

Proposed Response *Response Status* **Z**

Cl **33** *SC* **33.3.2** *P* **29** *L* **46** # **418**

Darshan, Yair — PowerDsine

Comment Type **T** *Comment Status* **D** *PD detection signature*

[Table 8] Table 8 looks as it represent numbers as seen by the PSE.
Is it the intention?
It is not clear since at the PD level when we define 25K+/-5% as a valid signature that must be detected, any other numbers below 25K-5% AND ABOVE 25k+5% is not relevant since this PD is not compliant.
Should only PSE level need to be concern regarding the definitions of:
- Must detect
- Must reject
- May detect
- May reject

SuggestedRemedy

Need to be clarified by John.

Proposed Response *Response Status* **Z**

Cl **33** *SC* **33.3.2** *P* **29** *L* **8** # **530**

Grow, Robert M. Intel

Comment Type **TR** *Comment Status* **A** *PD detection signature*

The signature requirements are ambiguous, because the term pairs is not clear. It is also not clear if or how the requirements are applied between the Mode A and Mode B pairs.

SuggestedRemedy

Clarify that the signature requirements are between the pairs of a particular mode.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 632.

Cl **33** *SC* **33.3.2** *P* **29** *L* **8** # **632**

Brikovskis, Rhett Lantern Communicatio

Comment Type **T** *Comment Status* **A** *PD detection signature*

Text is confusing.

SuggestedRemedy

Replace sentences on lines 8-12 with:

"If a PD will accept power via MDI, but is not powered via MDI, it shall present a valid detection signature at the MDI on each set of pairs defined in section 33.3.1.

If a PD will not accept power via MDI, it shall present an invalid signature on each set of pairs defined in section 33.3.1."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

"If a PD will accept power via MDI, but is not powered via MDI, then it shall present a valid detection signature at the MDI between Positive Vport and Negative Vport of PD mode A and between Positive Vport and Negative Vport of PD mode B as defined in section 33.3.1.

A PD shall present an invalid signature at the MDI between Positive Vport and Negative Vport of PD mode A and between Positive Vport and Negative Vport of PD mode B as defined in section 33.3.1 while it is in a mode where it will not accept power via MDI."

Insert a figure.

Cl **33** *SC* **33.3.3** *P* **30** *L* **32** # **55**

McCormack, Michael 3Com

Comment Type **TR** *Comment Status* **A** *PD classification signature*

The requirement that a PD present only one classification seems a bit harsh. Take for example, the EtherShave(tm) electric razor which may have the ability to have the EtherBrush (tm) electric toothbrush attachment. When the weary traveler plug in his shaver, he may mistakenly not have attached his toothbrush, so the shaver may report itself as a Class 1 device. However, when the travel attaches the toothbrush, the EtherShave (tm) would be expected to drop the power request signal and renegotiate as a class 2 device in case the user wished to simultaneously brush and shave (though user testing may shown this is unlikely, as engineers we must classify to the worst case). This reclassification would appear to be precluded by the sentence 'A PD that implements classification shall present one and only one . . .'

SuggestedRemedy

The editor should come up with wording that would allow changes in classification to occur or strike the 'one and only one' portion and leave only that the classification must be the same in both methods.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change p.30, l.50 "characteristics and" to "characteristics during classification and"

Cl **33** *SC* **33.3.3** *P* **30** *L* **39** # **728**

Thaler, Pat Agilent Technologies

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

The classification signatures appear to require a different input resistance than the the detection signature.

How does the PD know that classification is in progress so that it can change its behavior?

For instance, the class 4 limits require an impedance of about 400 ohms. Also, there for some of the classes, there is no resistance that will produce the current specified for the voltage range. For example, for class 4 at 15 volts one would need an impedance between 357 and 417 ohms but that will produce too much current for the class at 20 V.

SuggestedRemedy

Clarify the behavior required by the PD to support classification.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

The V-I response can have break points

An informative annex will be added to illustrate the concepts of detection and classification.

5/15/02 update: The informative annex is changed to a figure in the in body of the document. See comment 622.

Cl **33** *SC* **33.3.3** *P* **30** *L* **40** # **169**

Dwelley, Dave — Linear Technology

Comment Type **TR** *Comment Status* **A** *PD classification signature*

0.5mA min current for PD is too high for 26.5k + 2 cold diodes. We really don't need a min on this spec

SuggestedRemedy

Change min to 0mA

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.3.3** *P* **30** *L* **8** # **659**

karam, roger — cisco

Comment Type **T** *Comment Status* **A** *PD classification signature*

No reference is made to the total classification time anywhere.
i think we agreed to 75ms somewhere if not 50ms

SuggestedRemedy

add the total classification time allowed .

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.3.3** *P* **31** *L* **5** # **599**

John Jetzt — Avaya, Inc.

Comment Type **TR** *Comment Status* **A** *PD classification signature*

Need the voltage limiting condition.
The PSE limits the voltage to 30 volts

SuggestedRemedy

Add the condition to column 2: PSE Voltage limited to 30V

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.3.4** *P* **32** *L* # **439**

Darshan, Yair — PowerDsine

Comment Type **T** *Comment Status* **A** *PD power supply limits*

[Table 12] The PD input impedance parameter was forgoten in draft 3.

SuggestedRemedy

Add the following data to table 12 item 3-b:
Parameter column: "PD power supply input impedance from DC to f>fbw"
Symbol="Zin", Units = "Ohms", Min. value="30"
Notes column:
a) Measured at the PD DC/DC converter input (and not at PD port) at load equivalent to P=12.95W at PD power supply input.
b) For P< 12.95W the max PD power supply input impedance will be limit to Zin=30x12.95/P.
c) The PD power supply input impedance is not including any circuitry between PD input to PD DC/DC converter input (EMI filter or PD power supply input capacitor effect etc.)
d) Fbw is the crossover frequency of the DC/DC converter transfer function.
e) See TBD setup in order to extract the PD power supply input impedance out of PD port input impedance measurements.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.3.4** *P* **32** *L* **18** # **691**

Darshan, Yair — PowerDsine

Comment Type **T** *Comment Status* **A** *Power Removal*

[Table 12] It will be easier for 3rd disconnect alternative to increase min capacitance from 5uF to 50uF.

SuggestedRemedy

Change Table 12 item 3 from 5u to 50uF or TBD value after doing the work.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution of comment 678.

Cl **33** *SC* **33.3.4** *P* **32** *L* **7** # **422**

Darshan, Yair PowerDsine

Comment Type **T** *Comment Status* **A** *PD power supply limits*

[Table 12] The number 0.37 is an error.
It should reflect the minimum input power at all operating voltage range.
The number should be replaced with "Pport1" according to the equation described in line 8.

SuggestedRemedy

Change the number 0.37 with the term "Pport1" in line 7.
In addition, change from Port to Pport1 in line 8.

In addition the word ""item"" in line 16 is redundant.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.3.4** *P* **33** *L* **12** # **731**

Thaler, Pat Agilent Technologies

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

Same comment as on table 5 ripple and noise. Values do not appear to be compatible with the PMD noise specs.

SuggestedRemedy

Make them compatible.

Proposed Response *Response Status* **C**

REJECT.

See comment 719.

Cl **33** *SC* **33.3.4** *P* **33** *L* **22** # **425**

Darshan, Yair PowerDsine

Comment Type **T** *Comment Status* **A** *PD power supply limits*

[Table 12] The minimum PD input voltage at 350mA average is 37V=44V-20Rx0.35A and at 0.4A peak is 36V=44V-20R*0.4A.

SuggestedRemedy

Line 22: the words " of 36V" is redundant.
Lines 23 and 25: Change from 36V to 37V.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.3.4** *P* **33** *L* **7** # **424**

Darshan, Yair PowerDsine

Comment Type **T** *Comment Status* **A** *PD power supply limits*

[Table 12] The noise requirement is applicable for all PSE alternatives (a and b) as agreed at Austin.
Thus note (a) in item 3 should be deleted.
In addition, the noise and ripple requirements should be specified for all operating input voltage range as defined by item 1and from 0.44W to max PD input power as defined by the PD class according to Table 9.

SuggestedRemedy

1. Delete note (a) from item 4
2. Add note (a) as follows: "a) For all operating input voltage range as defined by item 1, and from 0.44W to max PD input power as defined by the PD class according to Table 9."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

1. Delete note (a) from item 4
2. Add note (a) as follows: "a) For all operating input voltage range as defined by item 1, and over the range of input power of the device."

Cl **33** *SC* **33.3.4.2** *P* **35** *L* **32** # **479**

Thompson, Geoffrey O. Nortel

Comment Type **T** *Comment Status* **D** *Electrical Specifications*

I am puzzled as to why the max (sustainable) short circuit current is specified at levels that are:
25% above the max inrush
43% above the max sustainable current
185% above the max sustainable current per conductor
(not including imbalance allowance)

SuggestedRemedy

I would think that a lower current (i.e. a foldback circuit) would be specified under short circuit conditions.

Proposed Response *Response Status* **Z**

Cl **33** *SC* **33.3.5** *P* **31** *L* **30** # **643**

Lisa Leo — Tyco Electronics

Comment Type **T** *Comment Status* **A** *Power Removal*

[lines 30-42] At least one technically proven disconnect method is included in the standard.

SuggestedRemedy

Keep the DC method. If the pulse-link method is proven unreliable, add the AC method.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution of comment 678.

Cl **33** *SC* **33.3.5** *P* **31** *L* **32** # **2**

Jackson, Stephen S. — Hatteras Networks

Comment Type **T** *Comment Status* **R** *Power Removal*

Nasty exclusion of non-MAC PDs

SuggestedRemedy

Change requirement to say "... shall be either ..." instead of "... shall be both ..." and change the word "and" on line 35 to "or"

Proposed Response *Response Status* **C**

REJECT.

These devices are beyond the scope of 802.3.

Cl **33** *SC* **33.3.5** *P* **31** *L* **32** # **56**

McCormack, Michael — 3Com

Comment Type **TR** *Comment Status* **D** *Power Removal*

Use of Link as defined elsewhere in 802.3 as a qualifier of the power maintenance signal is seriously flawed.

SuggestedRemedy

Add a parameter TIstartup with a 60 second value to table 5, add a parameter of Tlinkdropout with a 60 second value to table 5. Rewrite the entire section to change the requirements of link to be associated to the two times thus defined and specify the current drop out to be associated with its own drop out and start up time limits. OR drop the requirement for Link.

Proposed Response *Response Status* **Z**

Cl **33** *SC* **33.3.5** *P* **31** *L* **36** # **674**

NAKAMURA, KARL — CISCO SYSTEMS

Comment Type **T** *Comment Status* **A** *Power Removal*

missing is the time the PD must supply link

SuggestedRemedy

PD must generate link within Tlink = 3.5 seconds

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See resolution of comment 678.

Cl **33** *SC* **33.3.5** *P* **31** *L* **36** # **746**

Jonathan Thatcher — World Wide Packets

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

There does not appear to be any documentation related to the timing and protocol requirements to make a link based power maintenance system work. For example, and this is only an example, there is no clear timing requirement for a PD to power on, self test, and get the link up and running before the power is removed. If the intent is that the PSE is to handle power down differently during initialization, there is no definition of either the timing requirements nor -- more importantly -- the state machines to ensure interoperability. If interoperability cannot be ensured under a specific set of requirements, it has no place here. If it can, then specify the requirements.

SuggestedRemedy

If there is to be a connection between link status and power enablement, make it explicit. If this cannot be done, remove it.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE. The text and sections addressed in this comment have been removed and/or
modified by Motion 1 of May 14, 2002.

See comment 678.

Vote to accept Y:25 N:0

Cl **33** *SC* **33.3.5** *P* **31** *L* **36** # **696**

Bob Leonowich — Agere Systems

Comment Type **TR** *Comment Status* **R** *Power Removal*

To require Transmission activity from a PD, adds much unnecessary complexity to the protocol. While it is true many devices will support this as a natural consequence of being ethernet, there is a class of very primitive devices that will have no need to do this (a EXIT sign with nothing more than a light bulb).
Also, the PSE now has to be "data link aware". Without this stipulation, the PSE didn't have to communicate to the communication IC that is doing the link management. Now there may be potential overvoltage conditions that must be considered as the two domains communicate link status between each other. (Without this requirement, the PSE could have been DC isolated from the DTE power domain.)

SuggestedRemedy

Remove the requirement for PD_DATA_link.

Proposed Response *Response Status* **U**

REJECT.

Link has been added based on the judgment of the committee. Devices that do not have an 802.3 compliant MAC are beyond the scope of our PAR.

Cl **33** *SC* **33.3.5** *P* **31** *L* **37** # **690**

Darshan, Yair — PowerDsine

Comment Type **T** *Comment Status* **A** *Power Removal*

Following the addition of alternative c for disconnect detection.

SuggestedRemedy

Line 37: Add "c) Min value of parameter TBD as defined in Table 12

In addition, the wording of the end of line 33 should be change from "both" to "all" or equivalent wording.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 535.

Cl **33** *SC* **33.3.5** *P* **31** *L* **40** # **475**

Thompson, Geoffrey O. — Nortel

Comment Type **TR** *Comment Status* **R** *Power Removal*

The sentence: "Powered PDs which no longer require power shall remove both components a and b of the power maintenance signal." requires that a PSE provide system features to the lowest common denominator of the 2 systems. That is, it requires a system to go through the LINK TEST FAIL state which will interrupt data transmission. This is not necessary and an unfair burden for a Powered PD that is connected to an "a" type PSE and wishes to switch from DTE Power to line power.

SuggestedRemedy

Remove the sentence.

Proposed Response *Response Status* **U**

REJECT.

The intent of requiring both components at the PD was to allow the PSE only to examine a single component.
This is a requirement as it was determined for a midspan PSE the burden of examining data signals was too great.

Cl **33** *SC* **33.3.5** *P* **32** *L* **1** # **747**

Jonathan Thatcher — World Wide Packets

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

Many specifications in Table 12 are identical to Table 5. In particular Ripple and Noise. The implication is that the channel adds no more than zero noise. Is the requirement that existing cable plants not add noise? Is this defensible?
P.S. Are the twisted pairs used in a way that minimizes common mode or differential mode noise (EMI) added by the plant?

SuggestedRemedy

Pick:
1. Remove all redundant information from table 12, even if this means removal of the entire table.
2. Characterize the channel and maximum noise and make it clear that the PSE spec plus the channel spec is less than or equal to the PD spec.
P.S. If the power combinations over the twisted pairs are not optimized for EMI, do so.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

The noises in the tables are outputs from the PSE and PD.

Input noise specs are provided in Clauses 14, 25, and/or 40.
Table 12 will be updated to clearly state the noise is an output noise at the input. Additionally, we will define the additional impairments imposed by the medium.

Cl **33** *SC* **33.3.5** *P* **32** *L* **20** # **300**

Dawe, Piers — Agilent

Comment Type **TR** *Comment Status* **A** *PD power supply limits*

What does this mean:
"... peak current will be 0.4A max for a max duration of 50mS."

SuggestedRemedy

Please clarify

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Insert "While there is no absolute maximum capacitance, the" at the beginning of the note.

Add second sentence: "Input capacitance values of 180 uF or less require no special input considerations."

Cl **33** *SC* **33.3.5** *P* **33** *L* **46** # **663**

karam, roger — cisco

Comment Type **T** *Comment Status* **A** *PD power supply limits*

if the capacitor > 180uf, do we not need to state what the inrush is
or would the 400ma do if it does we clarify it.
so if c>180uf i-inrush is a 400ma max we need to agree on a number.

SuggestedRemedy

TBD

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change l.47: "must" becomes "shall".

Cl **33** *SC* **33.3.5** *P* **33** *L* **5** # **445**

Brown, Kevin C. — Broadcom

Comment Type **TR** *Comment Status* **A** *PD power supply limits*

Ripple and noise should be specifed for common mode and differential noise pair to pair, as in Table 5 page 24.

SuggestedRemedy

Change Table 12 Item 4 Notes to read:

Common mode and / or differential noise pair to pair values.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.3.5** *P* **33** *L* **7** # **662**

karam, roger — cisco

Comment Type **T** *Comment Status* **A** *PD power supply limits*

a) applicable when feeding through signal carrying pairs
well revisit my noise Data from the July 2000 meeting for Link integrity due to noise and you will find the noise spec applies to both signal and spair pairs!

see slide 91 at
http://www.ieee802.org/3/af/public/jul00/karam_1_0700.pdf
the conclusion was that Used or Unused pairs behaved in similar ways
the idea was that the distributed capacitance from one pair (tied as a single)wire to the next pair made that pair suseptible to noise.

SuggestedRemedy

a) applicable when feeding through any pair carrying power (alternative A or B)

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 424.

Cl **33** *SC* **33.3.5** *P* **34** *L* **5** # **664**

karam, roger — cisco

Comment Type **T** *Comment Status* **X** *PD power supply limits*

VOn 44v Max
well the PD better turn on if i have a 1meter cable at a level below the allowed 44v min supply? what am i missing should this not be around 37-38v?

SuggestedRemedy

TBD

Proposed Response *Response Status* **Z**

Cl **33** *SC* **33.3.5** *P* **34** *L* **5** # **170**

Dwelley, Dave — Linear Technology

Comment Type **TR** *Comment Status* **D** *PD power supply limits*

Need to add hysteresis spec

SuggestedRemedy

Add 6c: PD Power Supply Hysteresis (min) 8V

Proposed Response *Response Status* **Z**

Cl **33** *SC* **33.3.5** *P* **34** *L* **8** # **666**

karam, roger cisco

Comment Type **T** *Comment Status* **A** *PD power supply limits*

Min Pd voltage to off is 30v
how does this affect the fact that a classifiable PD may have its current source on at this voltage do we need to raise this??

SuggestedRemedy

TBD

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Move down PSE max probe voltage for classification to 28V.

Cl **33** *SC* **33.4** *P* **35** *L* **3** # **733**

Thaler, Pat Agilent Technologies

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

"shall apply" should be "apply". Also, it is not clear what is meant by "when specified the requirements shall apply only to the transmit and receive pairs". That seems to mean "If a requirement says it applies only to the transmit and receive pairs than it applies to only those pairs." but that wouldn't be necessary to say. Also, please clarify whether transmit and receive means data transmit and receive or power transmit and receive.

SuggestedRemedy

Make this say whatever was intended.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove "shall"

The entire section has been rewritten.

Cl **33** *SC* **33.4.1** *P* **35** *L* **12** # **570**

Burton, Scott Mitel Networks

Comment Type **T** *Comment Status* **A** *Electrical Specifications*

The draft is missing the sections pertaining to the electrical power distribution environments A and B.

SuggestedRemedy

Paste the sections related to Environment A and B into this clause.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 158

Cl **33** *SC* **33.4.1** *P* **35** *L* **12** # **158**

Vergnaud, Gérard Alactel

Comment Type **TR** *Comment Status* **A** *Electrical Specifications*

[lines 12-25] I disagree with the redaction of this sub-clause.

Indeed I don't know why this requirement is limited to the environment B requirement. Why environment A requirement are not reminded?

SuggestedRemedy

I suggest that this subclause only reminds the sub-clause 9.7 (Electrical isolation) of the IEEE Std 802.3, 2000 Edition.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Copy and editorially modify as necessary.

Cl **33** *SC* **33.4.1** *P* **35** *L* **14** # **672**

NAKAMURA, KARL CISCO SYSTEMS

Comment Type **T** *Comment Status* **A** *Electrical Specifications*

Why are we adding this section here?
why not reference 802.3?

SuggestedRemedy

reference 802.3 this spec should be the same

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 158

Cl **33** *SC* **33.4.1** *P* **35** *L* **14** # **568**

Burton, Scott — Mitel Networks

Comment Type **T** *Comment Status* **R** *Electrical Specifications*

[lines 14-15] The statement "..including frame ground (if any)" implies that a PD must have isolation between its MDI leads and its internal circuitry regardless of whether there are any other external electrical connections to the device or even any accessible conductive parts or surfaces. Is this the intent? If so, this will add to the cost and complication of simple, self-contained, ungrounded, plastic-enclosed PDs with no apparent benefit. The requirements imposed on the PD should be no more severe than those imposed on the RJ45 jack that provides the connection to the network.

SuggestedRemedy

Change the requirement to "The PSE or PD shall provide electrical isolation between all user-accessible, grounded or ungrounded, metallic parts and all MDI leads. This electrical separation shall withstand the appropriate Electric Strength requirements of a 60950-based standard." [see previous comment]

Proposed Response *Response Status* **C**

REJECT.

This is exactly parallel text to the isolation requirements already contained in 802.3. Relaxing or changing the specification here would not eliminate the requirment that already exists.

Cl **33** *SC* **33.4.1** *P* **35** *L* **14** # **57**

McCormack, Michael — 3Com

Comment Type **TR** *Comment Status* **R** *Electrical Specifications*

The isolation requirements ignore the two traditional 802.3 isolation enviroments.

SuggestedRemedy

Cut and paste the two isolation enviroments from clause 14

Proposed Response *Response Status* **C**

REJECT.

See comment 158

Cl **33** *SC* **33.4.1** *P* **35** *L* **18** # **567**

Burton, Scott — Mitel Networks

Comment Type **T** *Comment Status* **D** *Electrical Specifications*

The reference to IEC 60950: 1991 is incorrect. The 1991 version of the standard was 950, not 60950. In any case, the 1991 version of the standard is obsolete. Also the numeric Section references are no longer applicable in the current standard and are subject to change with each new standard revision.

SuggestedRemedy

Change the text of this clause to "This electrical separation shall withstand the appropriate Electric Strength requirements of a 60950-based standard."

Proposed Response *Response Status* **Z**

Cl **33** *SC* **33.4.1** *P* **35** *L* **20** # **588**

Stephen Haddock — Extreme Networks

Comment Type **T** *Comment Status* **R** *Electrical Specifications*

Is this intended to cover ESD discharge? If so, is it sufficient to handle the nasty discharges observed with some cat-5 cable? If not, is there some other ESD requirement? It is mentioned in the safety requirements (33.5.2), but I believe there is a difference between ESD concerns for personal safety versus equipment damage.

SuggestedRemedy

Add a requirement for expected ESD tolerance.

Proposed Response *Response Status* **C**

REJECT.

Not intended as an ESD tolerance.

Cl **33** *SC* **33.4.10** *P* **38** *L* **1** # **697**
Chris Di Minico CDT Corporation

Comment Type **T** *Comment Status* **A** *Electrical Specifications*
[lines 1-47] Delete 33.4.10,33.4.10.1,33.4.10.2

SuggestedRemedy
Insert

33.4.10 Midspan PSE - Generic cabling for customer premises applications

A primary application for the Clause 33 specification is expected to be between a workstation and the local telecommunications closet in commercial buildings. This application topology is generally referred to as the horizontal cabling subsystem. As specified in ISO/IEC 11801, the maximum length of a horizontal cabling subsystem channel is 100 m. The channel consists of cords, cables, and connecting hardware. When the PSE is implemented in the horizontal cabling subsystem it shall not alter the distance requirements and transmission performance category of the specified ISO/IEC 11801 cabling channel.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See comment 337

Cl **33** *SC* **33.4.10** *P* **38** *L* **10** # **266**
Cobb, Terry Avaya

Comment Type **T** *Comment Status* **A** *Electrical Specifications*
ISO has added the transition point connector.

SuggestedRemedy
Add Transition Point Connector to Figure 33.10, see figure 40A-1 in Annex 40A.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See comment 337

Cl **33** *SC* **33.4.10** *P* **38** *L* **10** # **361**
Wagner, Martin Corning Cable System

Comment Type **TR** *Comment Status* **A** *Electrical Specifications*
incorrect text in figure 33.10

SuggestedRemedy
replace "Wall Jack" by "TO" wich meens "telecomunication outlet"

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See comment 337

Cl **33** *SC* **33.4.10** *P* **38** *L* **12** # **362**
Wagner, Martin Corning Cable System

Comment Type **TR** *Comment Status* **A** *Electrical Specifications*
missing part in fingure 33.10

SuggestedRemedy
add between "Wall Jack" and "Interconnect" a circle named "Consolidation point"

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See comment 337

Cl **33** *SC* **33.4.10** *P* **38** *L* **29** # **338**
Pincu, David PowerDsine

Comment Type **TR** *Comment Status* **A** *Electrical Specifications*
The sentence "Configurations with a PSE in the cabling channel shall alter the transmission requirements of the cabling channel as specified in ISO/IEC 11801-2000 " is redundant .This is because PSE's which are meeting the requirements to follow in the next sub clauses ,cause minimal degradation that allows ample saftey margins for proper performance of 10/100 Base T as demonstrated in my presentations in Oct.2000 .

SuggestedRemedy
Remove this sentence.

(The second sentence in this paragraph is in place)

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See comment 337

Cl **33** *SC* **33.4.10** *P* **38** *L* **3** # **31**
Alan Flatman LAN Technologies

Comment Type **TR** *Comment Status* **A** *Electrical Specifications*
[lines 3, 30, 31] "balanced cabling" is sufficient. ISO/IEC 11801 Edition 2 specifies requirements to support 802.3af; these are not covered by ANSI/TIA/EIA 568 or earlier versions of ISO/IEC 11801. ISO/IEC 11801 Edition 2 is expected to become an FDIS in March 2002 and an IS in September 2002, which is compatible with the anticipated approval/publication cycle for 802.3af.

SuggestedRemedy
Delete "twisted-pair" and correct reference to ISO/IEC 11801 Edition 2 (2002) 3 times in sub clause.

Proposed Response *Response Status* **U**
ACCEPT IN PRINCIPLE.

See comment 337

Cl **33** *SC* **33.4.10** *P* **38** *L* **4** # **360**
Wagner, Martin Corning Cable System

Comment Type **TR** *Comment Status* **A** *Electrical Specifications*
no clear description

SuggestedRemedy
add "Typical configuration have usually less parts (e.g. no consolidation point)"

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See comment 337

Cl **33** *SC* **33.4.10.1** *P* **38** *L* **33** # **32**
Alan Flatman LAN Technologies

Comment Type **TR** *Comment Status* **A** *Electrical Specifications*
[lines 33-39] Is this a realistic requirement? Is mid-span PSE electrically equivalent to a connector pair? Screened connectors require other parameters to be included, but connector pair performance is already defined in 33.4.9, so no need to duplicate here.

SuggestedRemedy
Comment on reality. Delete last sentence.

Proposed Response *Response Status* **U**
ACCEPT IN PRINCIPLE.

See comment 337

Cl **33** *SC* **33.4.10.1** *P* **38** *L* **33** # **267**
Cobb, Terry Avaya

Comment Type **T** *Comment Status* **A** *Electrical Specifications*
Add transition point connector:

SuggestedRemedy
In title change to: Interconnect, transition point connector, or wall jack PSE

Also change first sentance of the paragraph that follows.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See comment 337

Cl **33** *SC* **33.4.10.1** *P* **38** *L* **37** # **339**
Pincu, David PowerDsine

Comment Type **TR** *Comment Status* **A** *Electrical Specifications*
The paragraph calls for complience with ISO/IEC 11801 Cat 5 . This means complience with Enhanced Cat 5 (Cat 5 E) levels.

This is an un necessary over specification for the MID Span device which was disscussed in legth in the OCT 2000 meeting .

There should be proper justification to deviate from issues disscussed and closed in the past , and as they were part of previous drafts.

SuggestedRemedy
Revert to the previous draft D1.2 wording and levels as definded in Ver D1.2 Para. 33.4.9.2 thru 33.4.9.4

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See comment 337

Cl **33** *SC* **33.4.10.1** *P* **38** *L* **38** # **260**
Cobb, Terry Avaya

Comment Type **TR** *Comment Status* **A** *Electrical Specifications*
ISO/IEC 11801-2002 is not published.

SuggestedRemedy
Replace with ANSI/TIA/EIA-568-B.2

Proposed Response *Response Status* **U**
ACCEPT IN PRINCIPLE.

See comment 337

Cl **33** *SC* **33.4.10.2** *P* **38** *L* **42** # **33**
Alan Flatman LAN Technologies

Comment Type **T** *Comment Status* **A** *Electrical Specifications*
[lines 42-45] Screening requirements shall also be met if a screened cord is used. Also, the correct standard reference should be used.

SuggestedRemedy
Add "Screening requirements shall also be met if a screened cord is used". Standards reference should be "ISO/IEC 11801 Edition 2 (2002)"

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE.

See comment 337

Cl **33** *SC* **33.4.10.2** *P* **38** *L* **45** # **261**
Cobb, Terry Avaya

Comment Type **TR** *Comment Status* **A** *Electrical Specifications*

ISO/IEC 11801-2002 is not published.

SuggestedRemedy

Replace with ANSI/TIA/EIA-568-B.2

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

See comment 337

Cl **33** *SC* **33.4.2** *P* **35** *L* **31** # **434**
Darshan, Yair PowerDsine

Comment Type **T** *Comment Status* **A** *Electrical Specifications*

The requirement is to resume operation after the short circuit is removed.
We didnt defined the max time required to resume operation.

SuggestedRemedy

To add at the end of the sentence in line 31 "..within 5sec"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Strike "return to normal operation."

Cl **33** *SC* **33.4.2** *P* **35** *L* **32** # **305**
Dawe, Piers Agilent

Comment Type **T** *Comment Status* **A** *Electrical Specifications*

"such a short circuit shall not exceed 500 ma."

SuggestedRemedy

Please explain relation to Table 33-5 I_LIM <= 450 mA.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace 500mA with reference to Ilimmax in table 5

Cl **33** *SC* **33.4.3** *P* **36** *L* **5** # **435**
Darshan, Yair PowerDsine

Comment Type **T** *Comment Status* **A** *Electrical Specifications*

The target is to have as much as high Ecm/Ediff.
Line 5 requires "shall not exceed"
It should be changed to "shall exceed"

SuggestedRemedy

Change line 5 from "shall not exceed" to "shall exceed"

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.4.4** *P* **36** *L* **42** # **748**
Jonathan Thatcher World Wide Packets

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

Anyone looking for cable specifications for Ethernet would not know to look at clause 33 for additional specifications.
p.s. Does this imply that existing wiring must be tested or is it the case that virtually all, if not all, existing plants will meet the specification?

SuggestedRemedy

New specifications for the cable plant should be reflected in the appropriate clauses so that anyone implementing a xBASE-T will find all cable plant specifications in the appropriate place, even if this means a reference to clause 33..

Proposed Response *Response Status* **C**

ACCEPT.

We believe that we have only restated cabling requirements for existing plant, with the exception of DC resistive imbalance, which we are working with liaisons to specify. This has been made explict by other comment resolutions.
We expect standards this year.

DC resistive imbalance only applies to Clause 33, and does not affect other clauses.

The restatements of existing standards is only for convenience.

We will add notes in appropriate areas of 14, 25 and 40 refering to clause 33 if implementing power.

Cl **33** *SC* **33.4.5** *P* **37** *L* **2** # **264**

Cobb, Terry Avaya

Comment Type **T** *Comment Status* **R** *Electrical Specifications*

Lower Frequency may be relaxed to 1 MHz instead of .15 Mhz. Requirements in PHY's are only down to 1 MHz.

SuggestedRemedy

?

Proposed Response *Response Status* **C**

REJECT.

This is not just a PHY issue.
Prefer to leave the lower frequency limit.

Cl **33** *SC* **33.4.7** *P* **37** *L* **31** # **670**

karam, roger cisco

Comment Type **T** *Comment Status* **A** *Electrical Specifications*

something about the 10mv spec here (delivered by the next pair up to 100mhz bothered me. so i just came back from the LAB:

10BT packets at 120m of cat5 caused me 20mv @5mhz and 30mv @10mhz on the next pair.

100BT at 120m of cat5 caused me 13mv on the next pair.
and a 30MHZ sine wave on a pair caused me 40mv on the next pair (used 5.3v pk-pk) at the source.
all measured differentially... So we need to spec this better.

SuggestedRemedy

TBD

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add the phrase: "when the PHY, if present, is in the condition equivalent to power-down mode of 40.8.3."

We will define a test fixture and procedure.

Cl **33** *SC* **33.4.7** *P* **37** *L* **32** # **265**

Cobb, Terry Avaya

Comment Type **T** *Comment Status* **R** *Electrical Specifications*

Requirements may be relaxed to 1 MHz for the lower frequency. Requirements in PHY's are only down to 1 MHz.

SuggestedRemedy

?

Proposed Response *Response Status* **C**

REJECT.

Not enough information provided.

Cl **33** *SC* **33.4.8** *P* **37** *L* **35** # **258**

Cobb, Terry Avaya

Comment Type **TR** *Comment Status* **A** *Electrical Specifications*

Unecessary and need to include something about common mode impedance, change the text to:

Note, the common mode impedance is not a requirement.

SuggestedRemedy

While power is being applied the differential impedance of the transmit and receive pairs at the PHY's MDI shall be such that any reflection shall meet the return loss requirements as specified in sub-clause 14.3.1.3.4 for a 10 Mbit/s PHY and sub-clause 40.8.3.1 for a 100 MBit/s or greater PHY. In addition while power is being applied all pairs terminated at a MDI should maintain a nominal common mode impedance of 75 ohms.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

While power is being applied, the differential impedance of the transmit and receive pairs at the PHY's MDI shall be such that any reflection shall meet the return loss requirements as specified in sub-clause 14.3.1.3.4 for a 10 Mbit/s PHY and sub-clause 40.8.3.1 for a 100 MBit/s or greater PHY. In addition while power is being applied all pairs terminated at a MDI should maintain a nominal common mode impedance of 75 ohms.

Cl **33** *SC* **33.4.8** *P* **37** *L* **39** # **437**
Darshan, Yair PowerDsine

Comment Type **TR** *Comment Status* **D** *Electrical Specifications*

Are the requirements for 100Mbit/s for Return Loss came from 802.3?
I have checked there and didn't find the source of this info?

SuggestedRemedy

Need clarifications during the comment resolution meeting in order to justify the following:
1. The relevancy of paragraph 33.4.8 where it is citing equations and values, which should be appear elsewhere in the 802.3.
2. The source of the numbers specified is not clear.

Proposed Response *Response Status* **Z**

Cl **33** *SC* **33.4.9** *P* **37** *L* **42** # **334**
Pincu, David PowerDsine

Comment Type **TR** *Comment Status* **A** *Electrical Specifications*

this paragraph should be ommited

This is because the PSE is not a structured cabling component to which the EIA TIA standard is applicable.

The PSE port should,at the signal pairs, meet all parameters as specified in the applicable paragraphs of the 802.3 std. according to the protocol it supports 10/100/1000 Base T.

SuggestedRemedy

Omit this para.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.4.9** *P* **37** *L* **43** # **259**
Cobb, Terry Avaya

Comment Type **T** *Comment Status* **A** *Electrical Specifications*

To be consistent with last comment, change text to:

SuggestedRemedy

The MDI connector shall meet the requirements as specified in sub-clause 14.5.1 for a 10 Mbit/s PHY and sub-clause 40.8.3 for a 100 Mbit/s or greater PHY.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.4.9** *P* **37** *L* **44** # **481**
Thompson, Geoffrey O. Nortel

Comment Type **TR** *Comment Status* **A** *Electrical Specifications*

This is an ISO track document, it should not reference national or regional standards when international equivalents are available.

SuggestedRemedy

The reference should be wrt to ISO/IEC 11801.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause was removed

Cl **33** *SC* **33.4.9** *P* **37** *L* **45** # **30**
Alan Flatman LAN Technologies

Comment Type **TR** *Comment Status* **A** *Electrical Specifications*

Reference should be made to international standards, where appropriate. ISO/IEC 11801 Edition 2 specifies requirements to support 802.3af, including current rating of connectors; these are not covered by ANSI/TIA/EIA 568-B.2 or earlier versions of ISO/IEC 11801. Requirements for screened connectors are also specified by ISO/IEC 11801 but not by ANSI/TIA/EIA 568-B.2. ISO/IEC 11801 Edition 2 is expected to become an FDIS in March 2002 and an IS in September 2002, which is compatible with the anticipated approval/publication cycle for 802.3af.

SuggestedRemedy

Replace "ANSI/TIA/EIA-568-B.2" with "ISO/IEC 11801 Edition 2 (2002)"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause was removed

Cl **33** *SC* **33.4.9** *P* **37** *L* **45** # **359**
Wagner, Martin Corning Cable System

Comment Type **TR** *Comment Status* **A** *Electrical Specifications*

refer to international stardard ISO

SuggestedRemedy

replace "ANSI/TIA/EIA 568-B.2" by "ISO/IEC 11801-2000"

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Clause was removed

Cl **33** *SC* **33.5.1** *P* **39** *L* **5** # **569**

Burton, Scott — Mitel Networks

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

IEC publication 60950:1991 is not a valid standard reference. [see comment 27].

SuggestedRemedy

Change standard reference to IEC publication 60950, or to the more generic "60950-based standard".
Also this General Safety section should include the motherhood atatement:
"Shall comply with all applicable local and national codes related to safety."

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Use "60950"
Move motherhood sentence to 33.5.1.

Cl **33** *SC* **33.5.3** *P* **39** *L* **28** # **21**

Brown, Benjamin — AMCC

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

I'm not sure what king of weight is carried by the following phrase: "It is a mandatory function..." . Is this a compliance thing? Do you expect to write a PICs entry against this? Should this contain a shall? Is there a way to actually test your product to see if it complies with this requirement? The same comment applies to 33.5.4

SuggestedRemedy

I'm not sure how you should fix this but I hope you consider it.

Proposed Response *Response Status* **C**

REJECT.

Standard boilerplate.

Cl **33** *SC* **33.5.3** *P* **39** *L* **30** # **262**

Cobb, Terry — Avaya

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

Some exsisting cross-connects may fail under maximum current. A warning should be included. Note, this was approved at the last meeting.

SuggestedRemedy

It is possible that the current carrying capability of a cabling cross-connect may be exceeded by a PSE. The designer should consult the manufacturers specifications to ensure compliance with the appropriate requirements.

Proposed Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Add as subclause in 33.5: Patch Panel Considerations

Cl **33** *SC* **33.5.5** *P* **39** *L* **49** # **538**

Grow, Robert M. — Intel

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

This should clearly apply to the PSE and PD where the text has been focused on the cabling.

SuggestedRemedy

Change to read: "Application of any of the above voltage to a PSE or PD shall not result in any safety hazard."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.5.5** *P* **39** *L* **54** # **640**

Brikovskis, Rhett — Lantern Communicatio

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

Text requires compliance with applicable local and national codes. What codes are being referenced? Don't the references have to be included in this document?

SuggestedRemedy

Change the sentence to eliminate the "shall", or provide specific references to codes that are applicable.

Proposed Response *Response Status* **C**

REJECT.
Boilerplate.

Cl **33** *SC* **33.5.7** *P* **40** *L* **4** # **539**

Grow, Robert M. — Intel

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

While it is not necessary to specify the environmental requirements of the PSE and PD, it is a reasonable to assume a PSE or PD I buy will work on a ISO/IEC 11801 compliant cabling link. I don't recall if 11801 has environmental guidelines.

SuggestedRemedy

Clarify to indicate that environmental specifications for PSE and PD are outside the scope.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See 40.9.3.2.
Insert adaptation of this text in front of current text.
Omit 1000BASE-T reference and insert PSE and/or PD.

Cl **33** *SC* **33.5.8** *P* **40** *L* **15** # **485**

Thompson, Geoffrey O. Nortel

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

Additionally, I believe that we should recommend that the device be labelled as "PSE" or "PD" as appropriate.

SuggestedRemedy

Add item:
d) "PSE" or "PD" as appropriate.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.6** *P* **41** *L* **1** # **686**

Law, David J 3Com

Comment Type **TR** *Comment Status* **A** *Management function*

The Clause 22 updated for the new registers added by subclause 33.6 is missing.

SuggestedRemedy

Add Clause 22 update.

Note - Please see my Clause 22 update proposal supplied in attached FrameMaker file.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.6** *P* **41** *L* **1** # **455**

Thompson, Geoffrey O. Nortel

Comment Type **T** *Comment Status* **A** *Management function*

(Also 30.9.1.1)
I would like this considered so that we have a specific vote on the issue.
There is currently no control (register or Management) mechanism that allows override of PD detection for either test purposes or for use with potential (non-conformant) powered devices that do not obey the signature rules. It strikes me that such an ability would be highly useful for testing. There may also be situations where vendors will wish to have such a capability for pre-standard devices. It would be preferable to have that capability be uniform rather than have proprietary diversity.

SuggestedRemedy

Poll the implementors participating in the standarization. If this ability is being included on a proprietary basis to products then add it to the draft as a "test capability" with appropriate warning text.

Proposed Response *Response Status* **C**

ACCEPT. Put in a register bit

aPSEPowerDetectionStatus add new enumeration for "power forced on"

further work needed to make sure change is complete.

Cl **33** *SC* **33.6** *P* **41** *L* **1** # **684**

Law, David J 3Com

Comment Type **T** *Comment Status* **A** *Management function*

The Read Only bits (RO, LL & LH) should be placed in a separate register from the Read Write bits (R/W). The reason for this is that to set a single bit in a register software generally reads the register, changes only the bits it wants to change, preserves the remainder, then writes the information back in again. Having RO, R/W and LH or LL bits mixed in the one registers therefore presents a problem to this approach as the read to set a bit will also clear any LH or LL bits.

SuggestedRemedy

Split the registers into RO, LH & LL and R/W registers. If however this was simply done based on having 2 PSE registers and 2 PD registers then this would use up the remaining spare registers in the Clause 22 register set. Currently the PSE is address 11 and PD is address 12, if we provided a RO and R/W register for both the PSE and PD that would use say Address 11 and 12 for the PSE and address 13 and 14 for the PD.

The solution therefore proposed is to combine the PSE and PD register bits into the one register.

Register 11 would become the PSE Control register, note that there are no PD writable registers
Register 12 would become the PSE/PD Status register.

Register 11 would contain - PSE Detection Control, PSE Pair Control & PSE Power enable.
Register 12 would contain - PSE Over Current, PSE Under Current, PSE Detected PD Class, PSE Detection Status, PSE Pair Control Ability, PD Pair Status & PD Power Status.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.6** *P* **41** *L* **5** # **540**

Grow, Robert M. Intel

Comment Type **TR** *Comment Status* **A** *Management function*

The capability of supporting the MIB should be mandatory.

SuggestedRemedy

Change to read: "Where no physical embodiment of the MII or GMII exists, equivalent management capability must be provided."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.6.1** *P* **41** *L* **11** # **541**

Grow, Robert M. Intel

Comment Type **TR** *Comment Status* **A** *Management function*

Mixing status and control in a register is ugly.

SuggestedRemedy

Place all control bits for both PD and PSE in one register (e.g., 11) and all status bits in the other (e.g., 12).

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.6.1** *P* **41** *L* **13** # **688**

Law, David J 3Com

Comment Type **T** *Comment Status* **A** *Management function*

Clarify and make global the operation of the Latching High bit.

SuggestedRemedy

Add the following text as a second paragraph for subclause 33.6.1

'Some of the bits within registers are defined as latching high (LH). When a bit is defined as latching high and the condition for the bit to be high has occured, the bit shall remain high until after it has been read via the management interface. Once such a read has occured, the bit shall assume a value based on the current state of the condition it monitors.'

Change the text 'The Over Current bit shall be implemented with a latching function, such that the occurrence of an overcurrent condition will cause the Over Current bit to become set and remain set until it is cleared. The Over Current bit shall be cleared each time Register PSE is read via the management interface, and shall also be cleared by a PHY reset.' in subcluase 33.6.1.1.2 Over Current (11.12) to read 'The Over Current bit shall be implemented with latching high behavior as defined in 33.6.1.'.

Change the text 'The Under Current bit shall be implemented with a latching function ,such that the occurrence of a under current condition will cause the Under Current bit to become set and remain set until it is cleared. The Under Current bit shall be cleared each time Register PSE s read via the management interface, and shall also be cleared by a PHY reset.' in subcluase 33.6.1.1.3 33.6.1.1.3 Under Current (11.11) to read 'The Under Current bit shall be implemented with latching high behavior as defined in 33.6.1.'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.6.1** *P* **41** *L* **13** # **687**

Law, David J 3Com

Comment Type **T** *Comment Status* **A** *Management function*

Clarify and make global the operation of the Latching High bit.

SuggestedRemedy

Add the following text as a second paragraph for subclause 33.6.1

'Some of the bits within registers are defined as latching high (LH). When a bit is defined as latching high and the condition for the bit to be high has occured, the bit shall remain high until after it has been read via the management interface. Once such a read has occured, the bit shall assume a value based on the current state of the condition it monitors.'

Change the text 'The Over Current bit shall be implemented with a latching function, such that the occurrence of an overcurrent condition will cause the Over Current bit to become set and remain set until it is cleared. The Over Current bit shall be cleared each time Register PSE is read via the management interface, and shall also be cleared by a PHY reset.' in subcluase 33.6.1.1.2 Over Current (11.12) to read 'The Over Current bit shall be implemented with latching high behavior as defined in 33.6.1.'.

Change the text 'The Under Current bit shall be implemented with a latching function ,such that the occurrence of a under current condition will cause the Under Current bit to become set and remain set until it is cleared. The Under Current bit shall be cleared each time Register PSE s read via the management interface, and shall also be cleared by a PHY reset.' in subcluase 33.6.1.1.3 33.6.1.1.3 Under Current (11.11) to read 'The Under Current bit shall be implemented with latching high behavior as defined in 33.6.1.'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.6.1** *P* **41** *L* **8** # **271**

Tom Mathey Independent

Comment Type **T** *Comment Status* **A** *Management function*

Clause 33.6.1 now specifies use of registers not specified in base standard. The task force needs to open up clause 22 and add use of these registers to the base standard.

SuggestedRemedy

Add two new paragraphs with renumbering of one existing paragraph. Scrub base standard and admendments for any reference to renumbered clause.

Add: 22.2.4.3.(9) TITLE with text: Register 11 provides the bit values for MDI power as specified in 33.6
Add: 22.2.4.3.(10) TITLE with text: Register 12 provides the bit values for MDI power as specified in 33.6

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See David Law's law_1_0102.pdf in the draft 3.0 comment area.

Cl **33** *SC* **33.6.1.1.1** *P* **41** *L* **22** # **320**

Dawe, Piers — Agilent

Comment Type **TR** *Comment Status* **A** *Management function*

"A write shall be ignored ... these bits should be written as zero" Which is it? writeable or not?

SuggestedRemedy

? returned? contain? remain at? Similarly 33.6.1.2.1

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Copy equivalent text from Clause 45.

Cl **33** *SC* **33.6.1.1.2** *P* **41** *L* **32** # **191**

Turner, Ed — Lattice Semiconductor

Comment Type **T** *Comment Status* **A** *Management function*

The bit should not be cleared if the condition still exists when the register is read. Pat submitted very good solution text for similar bits in Clause 45 and I repeat her suggestion below.

SuggestedRemedy

Replace the two sentences :
'The Over Current bit .. .. cleared. The Over Current bit .. .. PHY reset.'
with :
'The Over Current bit shall be implemented with a latching function, such that when the over current condition has occured, the bit shall remain high until after it has been read via the management interface. Once such a read has occured, the bit shall assume a value based on the current state of the over current condition it monitors.'
This text, with suitable edits, should also be applied to the under current bit.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment 688.

Cl **33** *SC* **33.6.1.2.1** *P* **44** *L* **12** # **193**

Turner, Ed — Lattice Semiconductor

Comment Type **T** *Comment Status* **A** *Management function*

Table 33.23.
The PD sinks power rather than sourcing it.

SuggestedRemedy

Replace both instances of 'sourcing' with 'sinking'.

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **33.6.1.2.2** *P* **44** *L* **18** # **499**

Gentry, Denton — Dominet Systems

Comment Type **T** *Comment Status* **A** *Management function*

In Section 33.3 (page 28) in describing a Powered Device the standard says, "PDs which implement only Mode A but not Mode B or Mode B but not Mode A are specifically not in compliance with this standard." That is, a PD is required to implement both possible pinouts.
However, the Pair Status bits described in 33.6.1.2.2 are described as listing the supported Modes for this PD, and encodings are defined to allow a PD to support only one of the two modes. If all compliant devices must implement both modes, then they will always advertise the value 1 1 in their Pair Status.

SuggestedRemedy

Either of two remedies are possible:
1. Remove the text on page 28, lines 16 through 24 which state that a PD must implement both Mode A and Mode B.

2. Remove the Pair Status bits from the PD Control register. This means removing section 33.6.1.2.2 and altering Table 33-23 to remove the description of Pair Status. It also would remove the aPDPowerPairs attribute defined in 30.9.2.1.3.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Suggested remedy 2.

Cl **33** *SC* **33.6.1.2.2** *P* **44** *L* **19** # **28**

Brown, Benjamin — AMCC

Comment Type **T** *Comment Status* **A** *Management function*

[lines 19-22] These bits allow the PD to report which pinout modes it supports. However, 33.3.1 says that a PD must implement both modes A&B. Is there a conflict here?

SuggestedRemedy

Correct the conflict if indeed one exists.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Conflicting bits have been removed.

Cl **33** *SC* **33.6.1.2.2** *P* **44** *L* **20** # **542**

Grow, Robert M. Intel

Comment Type **TR** *Comment Status* **A** *Management function*

This conflicts with the requirement that a PD accept power over either Mode A or Mode B pairs. Providing this type of reporting capability is an incentive to non compliant implementation.

SuggestedRemedy

Either remove or redefine as status on which pairs power is being drawn. Correct table with chosen approach.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Conflicting bits have been removed.

Cl **33** *SC* **33.6.1.2.3** *P* **44** *L* **24** # **494**

Gentry, Denton Dominet Systems

Comment Type **T** *Comment Status* **A** *Management function*

Use of the terms PowerStatus and PowerPairs interchangeably is confusing. The management attribute to query which pinout a PD device supports is called "aPDPowerPairs". The control bits to query which pinout a PD device supports are called "Pair Status". Mixing terminology in this way is confusing.
I suggest changing the name of the control bits to "Power Pairs".

SuggestedRemedy

Change name of bits in 33.6.1.2.3 from "Power Status" to "Power Pairs" to match the name of the attribute. This also affects Table 33-23.

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change name to Power Pair Status.