

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

Cl 33 SC 3.4.2 P37 L 24 # 35  
 Beia, Christian STMicroelectronics

Comment Type T Comment Status D

In table 33-11a the Mark event Voltage is defined between 6.9V and 10V, while in figure 33-12a (pg 34) the Mark threshold is indicated between 10V and 14.5V. Since the state change is defined by the mark threshold, I propose to add a row in Table 33-11a for the parameter Mark Threshold Vthm, with range between 10V and 14.5V.

SuggestedRemedy

Add parameter Mark Threshold in Table 33-11. Symbol Vthm, Units V, Min 10, Max 14.5.

Proposed Response Response Status W

PROPOSED ACCEPT.

This is really a T comment

Cl 33 SC 3.4.2 P37 L 26 # 36  
 Beia, Christian STMicroelectronics

Comment Type T Comment Status X

The behavior of the PD in the voltage range between 10V and 14.5V is undefined. In this range the PD should sink enough current to discharge the port voltage, and should not exceed the maximum Class 4 current. I propose to add a row in Table 33-11a to define Mark Threshold Current between 0.25mA and 44mA, and to add a paragraph in section 33.3.4.2 to link the Mark Threshold current to the Mark threshold voltage range.

SuggestedRemedy

Add parameter Mark Threshold Current in table 33-11a, Symbol lthm, Units mA, Min 0.25, Max 44, Additional Information See 33.3.4.2.3  
 Add paragraph 33.3.4.2.3 with title Mark Threshold behavior, with text: A Type 2 PD shall not exceed the lthr current limits when voltage at the PI enters the Mark Threshold voltage specification.

Proposed Response Response Status W

This is really a T comment

Cl 99 SC P1 L # 37  
 Diab, Wael Broadcom

Comment Type ER Comment Status D

The draft should have an expiration date on it. This will become more important as we enter more formal reviews. The current language suggests that the document is valid but can change.

SuggestedRemedy

Here is an example from an EFM draft that could be used:

The draft has no special status, and ALL OF IT IS SUBJECT TO CHANGE. The formal expiration date of this draft is April 14, 2004.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Choose an expiration date of the next meeting?

Cl 99 SC P3 L 2 # 39  
 Diab, Wael Broadcom

Comment Type E Comment Status D EZ

Im assuming the box on this page is an editor's note

SuggestedRemedy

Please mark accordingly

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Add 'NOTE -' in front of 'This'

Cl 99 SC P L # 40  
 Diab, Wael Broadcom

Comment Type E Comment Status D EZ

Please add line numbers on frontmatter

SuggestedRemedy

Please add line numbers on frontmatter

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Wael to help editor get line number on frontmatter.

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

Cl 99 SC P4 L2 # 41  
Diab, Wael Broadcom

Comment Type E Comment Status D EZ

Please replace current list of participants with a note that indicates when it will be added

SuggestedRemedy

Please replace current list of participants with a note that indicates when it will be added

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Please remove Jefferson and Lincoln placeholders. Add box with note that participants will be added before sending to REVCOM.

Cl 99 SC P14 L # 42  
Diab, Wael Broadcom

Comment Type E Comment Status D EZ

Please delete extra page.

SuggestedRemedy

One convention is to always have even number pages in the draft so adding a blank page when you end in an odd page is an easy check at the end

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 33 SC 1 P1 L18 # 43  
Diab, Wael Broadcom

Comment Type TR Comment Status D

Line (d) is optional for 802.3af and required for 802.3at baseline. The language should reflect this as we will just have one clause after the project

SuggestedRemedy

Append the following text: ""This method is optional for Type I devices and mandatory for Type II devices""

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

The sentence makes no declaration of optional or mandatory, it only refers to methods that are later defined as optional or mandatory. A simple edit is to change it to "Optional or mandatory methods to classify.."

But I am also OK with not changing it at all.

Cl 33 SC 1 P1 L22 # 44  
Diab, Wael Broadcom

Comment Type TR Comment Status D

Item (f) is not accurate. The L2 method is mandatory for all Type 2 devices. It is optional for Type 2 PSEs. Again, as with previous comment this relates to clause 33 becoming the same clause for .3at and .3af

SuggestedRemedy

Strike "An Optional" and replace with "A".

Append the following text. This method is mandatory for all Type 2 devices. It is optional for Type 2 PSEs.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

The suggested text isn't quite accurate either. "This method is mandatory for all Type 2 POWERED devices."

I am also OK with just striking optional and leaving the rest as is. (see 43)

Cl 33 SC Figure 33-3 P19 L2 # 45  
Diab, Wael Broadcom

Comment Type T Comment Status D

Im not sure that this figure is now accurate for Gigabit Midspans

SuggestedRemedy

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See 119

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

Cl 33 SC 2 P3 L 32 # 46  
 Diab, Wael Broadcom  
 Comment Type **TR** Comment Status **D**  
 Deleting the word optional makes the functionality requirement of classification ambiguous for Type 1 vs. Type 2  
 SuggestedRemedy  
 Append the following sentence to the end of the paragraph: ""The classification function may be optional depending on the Type of PSE""  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.  
 See 229, 267

Cl 33 SC 2 P3 L 51 # 47  
 Diab, Wael Broadcom  
 Comment Type **TR** Comment Status **D**  
 Please delete the word both at the end of that line  
 SuggestedRemedy  
 Please show technical feasibility that midspans can support both A and B working together on the same link.  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT.

Cl 33 SC 2.2a P8 L 13 # 49  
 Diab, Wael Broadcom  
 Comment Type **TR** Comment Status **X**  
 Please change power requirement to PD power delivered.  
 SuggestedRemedy  
 We know that the objective calls for up to 30W of power at the PD. The final current is still under discussion. I would suggest using the language that a Type 2 PSE will supply at least 30W to the PD  
 Proposed Response Response Status **W**  
 see 83, does this satisfy commentor?

Cl 33 SC Table 33-3 P17 L 22 # 56  
 Diab, Wael Broadcom  
 Comment Type **TR** Comment Status **X**  
 The entry for the classes and class 4 in specific is confusing as it does not capture the capability for the link layer classification to override the HW. Also, for a Link Layer capable Type II it may never have to  
 SuggestedRemedy  
 Add footnote to explicitly clarify the Link Layer behavior identified in the comment  
 Proposed Response Response Status **W**  
 -

Cl 00 SC P L # 58  
 Diab, Wael Broadcom  
 Comment Type **TR** Comment Status **X**  
 There is a subtle inconsistency between the classification baseline we adopted and the draft. Specifically, the PD can only expect to see a maximum of 12.95W from the PSE while it waits for the L2 mechanism to come up. The issue in the draft is in several places describing this process it says that the PSE will treat a class 4 PD as it would under HW classification until the L2 engine is up. If I look at the power tables for HW classification they say 36W not 15.4W!  
 SuggestedRemedy  
 Please correct the following:  
 - In describing what a Type-2 PSE that is L2 capable does please specifically call out the limits to the power to be 15.4W consistent with the adopted baseline  
 - Please qualify the HW power tables with a footnote to explain when these apply for a Type 4  
 I will try to point out the discrepancies in other comments and specific locations but if I miss something please use this comment  
 Proposed Response Response Status **W**  
 -

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

Cl 33 SC 2.7.2a P18 L 35 # 59  
Diab, Wael Broadcom

Comment Type TR Comment Status D

As with my general comment, this incorrectly implies that a PD with Class 4 can expect to get the full power of 30W if a second mark event is eliminated and while the PSE's L2 engine is coming up

SuggestedRemedy

Please clarify that the limit from the PSE will be 15.4 until the L2 comes up

Proposed Response Response Status W

PROPOSED REJECT.

It already says : "In this case, the Type 2 PSE shall assume it is powering a Type 1 PD until successful link layer classification is performed."

What does "Type 2 PSE shall assume it is powering a Type 1 PD" mean? I read that as 15.4W.

Cl 33 SC 2.7.2a P18 L 43 # 60  
Diab, Wael Broadcom

Comment Type TR Comment Status D

I like the note. I would suggest that we have a default in case this case happens for some error in the system. Undefined behaviour is scary

SuggestedRemedy

I would suggest that the whole detection process is restarted and no power is applied if the 2 results are different.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

This change requires moving from a note to normative text and adding a shall. Need to decide on the action and change the text.

Another option is to power at the first class event level. This is based on the assumption that you have encountered a legacy non-compliant PD and that it is some weird operational mode during the second class event.

Cl 33 SC Tabl3 33-5 P23 L 32 # 62  
Diab, Wael Broadcom

Comment Type TR Comment Status X

720 mA number is not final

SuggestedRemedy

Please footnote the 720 mA number that it is a placeholder and dependent on input from other bodies. Please note that it will require 75% to adopt final number

Proposed Response Response Status W

No proposed response

Part of this note does exist on PDF page 2.

Cl 33 SC 3.1 P31 L 42 # 63  
Diab, Wael Broadcom

Comment Type TR Comment Status D

I dont recall that we formally made a decision to change the draft from disallowing 4-pairs to treating them as out of scope. The draft should reflect the decisions made in the group, I would request that we retain the old wording and formalize the decision in the TF first.

SuggestedRemedy

Please return the original text until we make a formal decision on this in the group

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 33 SC 3.2.3 P34 L 24 # 64  
Diab, Wael Broadcom

Comment Type ER Comment Status X

Please redraw Figure 33-12a in Frame. It is difficult to maintain non-frame figures in the 802.3 documents once the group is done. for example, modifications due to maintenance are hard.

SuggestedRemedy

Please redraw using Frame and similar conventions as used in other state diagrams

Proposed Response Response Status W

see 115

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

CI 33 SC 3.4a P37 L 52 # 66  
 Diab, Wael Broadcom  
 Comment Type ER Comment Status X  
 Can we reproduce the TLV in the 802.3 document?  
 SuggestedRemedy  
 Please reproduce the TLV in the 802.3 document, or at the very least circulate with the review package  
 Proposed Response Response Status W  
 -

CI 33 SC 3.4a.1 P54 L 1 # 67  
 Diab, Wael Broadcom  
 Comment Type T Comment Status X  
 This is not a state diagram  
 SuggestedRemedy  
 Please remove or rename figure to indicate example exchange of packets.  
 Please add a state diagram, prefereable the product of a baseline from the L2 ad-hoc  
 Proposed Response Response Status W  
 -

CI 33 SC 3.5.4 P41 L 46 # 68  
 Diab, Wael Broadcom  
 Comment Type E Comment Status D EZ  
 Please use subscripts  
 SuggestedRemedy  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Need to change the RMS, DC and ripple current equation to use subscripts.  
 See 71

CI 33 SC 7 P58 L # 69  
 Diab, Wael Broadcom  
 Comment Type ER Comment Status D  
 Please update PICs to reflect Type 1 and Type 2  
 SuggestedRemedy  
 Please update PICs  
 Proposed Response Response Status W  
 PROPOSED REJECT.  
 I recommend updating PICs after changes to the normative text are mostly done.

CI 00 SC P L # 70  
 Diab, Wael Broadcom  
 Comment Type E Comment Status D  
 Im assuming that we will modify Clause 30 as well for management  
 SuggestedRemedy  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Need specific suggested remedy or editorial instructions. Someone will need to take on the task to edit Clause 30.

CI 33 SC 3.5.4 P41 L 46 # 71  
 Darshan, Yair Microsemi Corporation  
 Comment Type E Comment Status D EZ  
 Draft D0.8  
 The variables name in lines 40-41 do not match the variables name in the equation  
 SuggestedRemedy  
 Change lportdc to lport\_dc  
 Change lportac to lport\_ac  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 Also see 68

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

Cl 33 SC figure 33-12a P34 L15 # 73  
 Darshan, Yair Microsemi Corporation

Comment Type T Comment Status X  
 Draft D0.8

The purpose of class event 3 is to create defined behaviour for type 2 PD when pinged repeatedly by Type 2 PSE.  
 There is no need to require that class 3 must consume 40mA.  
 It is possible that after two class events the PD will shut off the classification current source due to thermal limitations.

SuggestedRemedy

1. Define class event 3 as follows:  
 ""class event 3 is the event when PSE voltage ramps from  $V > V_{thm}$  towards  $V_{on}$ ""
2. Delete the "" $i=40mA$ "" from Class Event 3.

Proposed Response Response Status W

Cl 33 SC 3.5 P40 L17 # 74  
 Darshan, Yair Microsemi Corporation

Comment Type T Comment Status X Vport  
 Draft D0.8

We require from the PD to support PSE voltage transients less then 50V and down to around 46V.  
 If  $V_{pse} < 50V$  then  $V_{pd} < 41V$

$$V_{pd} = (V_{pse} + (V_{pse}^2 - 4 * R * P_{pd})^{0.5}) / 2.$$

For  $P_{pd} = 29.5W$ ,  
 $R = 12.5$  ohms  
 $V_{pd}$  is 36V for  $V_{pse} = 46.25V$ .

In addition we have a concensus that PD input thresholds are as in type 1.

SuggestedRemedy

- Change table 33-12 item 1 from 40V to 36V.
- Change table 33-5 item 2a to 7.5% instead of 7.6%.

Proposed Response Response Status W  
 see 168

Cl 33 SC 4.8 P50 L53 # 75  
 Darshan, Yair Microsemi Corporation

Comment Type T Comment Status D  
 Draft D0.8

We need to clearly define that Midspan should provide signal continuity for 1G Midspan as well.

SuggestedRemedy

Change line 53 from ""A Midspan PSE inserted into a channel shall provide continuity for the signal pairs.""

To ""A Midspan PSE inserted into a channel shall provide continuity for the signal pairs for all 4 pairs in 1000BT Midspan device"".

Proposed Response Response Status W  
 PROPOSED REJECT.

On a gig link, all 4 pairs are the signal pairs. For 10/100, this is only 1,2 and 3,6. People skilled in the art should know the difference already. The sentence is sufficient.

Cl 33 SC 5.9 P53 L36 # 76  
 Darshan, Yair Microsemi Corporation

Comment Type T Comment Status D  
 Draft D0.8

Update a) : If it for PDs only it should be from 36V to 57V.

SuggestedRemedy

Change a) from "" Power classification and power level in terms of maximum current drain over the operating voltage range, 44V to 57 V, applies for PD only""

To: ""Power classification and power level in terms of maximum current drain over the operating voltage range, 36V to 57 V, applies for PD only""

Proposed Response Response Status W  
 PROPOSED ACCEPT.

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

Cl 33 SC Table 33-12 P40 L 17-3 # 78  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status X

Draft D0.8:  
 Replace this comment and remedy with previous comment sent for draft D0.2:

Table 33-12 items 1 and 4: Need to update numbers

SuggestedRemedy

Item 1: Type 2 PD minimum voltage is 50v-12.5\*0.72\*0.4/0.35=39.71V and not 40V.

Item 4: Peak operating current at class 4 for type 2 PD:

Considerations:

1. For maximum PD available power.  
 The need is with high probability.

0.72A\*0.4/0.35 = 0.823A. (Same Icut/Iport ratio as in 802.3af)

Hence Iport peak max is 0.823 for the PD for 50msec max, 5% duty max.

Proposed Response Response Status W

-

Cl 33 SC 3.1a P32 L 13 # 79  
 Delveaux, Bill Cisco Systems

Comment Type E Comment Status D EZ

Lines 13-16 seem redundant.

This basically says to stay a Type 1 PD until you know you are connected to a Type 2 PSE using L2.

This does not need to be said again at this point, or it can be changed to a note if the group decides to leave it. We may also want to consider the same note for the L1 case to be complete.

SuggestedRemedy

Remove lines 13-16

Proposed Response Response Status W

PROPOSED ACCEPT.

This text is redundant with text on pg 37, line 15. If it is to remain, it should not be normative.

Cl 33 SC 2.2a P8 L7 # 83  
 Jetzt, John Avaya

Comment Type E Comment Status D

The phrase ""This limits"" is misleading in paragraph 2 and 3.

SuggestedRemedy

Paragraph 2:  
 Change to:  
 The minimum power the Type 1 PSE may expect to provide to a PD is 15.4 W ...

Paragraph 3:  
 Change to:  
 The minimum power the Type 2 PSE may expect to provide to a PD is 36 W ...

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

See 152, 236

Cl 33 SC 2.7.2a P17 L41 # 84  
 Jetzt, John Avaya

Comment Type E Comment Status D EZ

Table reference is incorrect.

SuggestedRemedy

Change reference to ""Table 33-4a"":  
 Paragraph 1: twice  
 Paragraph 2: twice  
 Paragraph 3: once  
 Paragraph 3: once

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 33 SC 2.7.2a P18 L23 # 85  
 Jetzt, John Avaya

Comment Type E Comment Status D EZ

Reference the Table.

SuggestedRemedy

""... the Vreset range as specified in Table 33-4a, ...""

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

Cl 33 SC 2.7.2a P18 L 25 # 86  
 Jetzt, John Avaya  
 Comment Type E Comment Status D EZ  
 Reference the Table.  
 SuggestedRemedy  
 "... IClass\_LIM min, as specified in Table 33-4a, ..."  
 "... IMark\_LIM min, as specified in Table 33-4a, ..."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 33 SC 2.7.2a P18 L 30 # 87  
 Jetzt, John Avaya  
 Comment Type E Comment Status D EZ  
 Since "class event" has been defined above, use this term instead of "classification event".  
 SuggestedRemedy  
 Change "classification event" to "class event" on the lines 30 and 31.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 Class event is also used after. Better to be consistent.  
 See comment 91.

Cl 33 SC 2.7.2a P18 L 34 # 88  
 Jetzt, John Avaya  
 Comment Type E Comment Status D  
 Enumerate what can be omitted.  
 SuggestedRemedy  
 "... omit the first mark event, the second class event, and the second mark event ..."  
 also in next paragraph, line 39.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Is this all the text that needs added?

Cl 33 SC 2.7.2a P18 L 39 # 89  
 Jetzt, John Avaya  
 Comment Type E Comment Status D EZ  
 Not the "advertised class" but rather the observed class.  
 SuggestedRemedy  
 "... according to the result of the first class event."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 The proposed text clarifies the sentence.

Cl 33 SC 2.7.2a P18 L 43 # 90  
 Jetzt, John Avaya  
 Comment Type E Comment Status D  
 Amend NOTE.  
 SuggestedRemedy  
 "NOTE - The result of the first class event and the result of the second class event should agree. If the results do not agree, the behavior of the PD is undefined."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Semantics: let the group decide the better sentence.

Cl 33 SC 2.7.2a P19 L 6 # 91  
 Jetzt, John Avaya  
 Comment Type E Comment Status D EZ  
 Amend parameter names.  
 SuggestedRemedy  
 Item 1a: Class Event Voltage  
 Item 1b: Class Event Current Limitation  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 If comment 87 is accepted this has to be also.



IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

Cl 33 SC 2.7.2a P20 L1 # 92  
 Jetzt, John Avaya  
 Comment Type E Comment Status D EZ  
 Correct the table number.  
 SuggestedRemedy  
 ""Insert ... Table 33-4b; ..."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 33 SC 2.8 P23 L13 # 93  
 Jetzt, John Avaya  
 Comment Type E Comment Status D EZ  
 Correct parameter name in Table 33-5, Item 1.  
 (The title of 33.2.8.1 was changed to Static Output Voltage.)  
 SuggestedRemedy  
 ""Static output voltage""  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 33 SC 3.4.2 P36 L50 # 94  
 Jetzt, John Avaya  
 Comment Type E Comment Status D EZ  
 Use complete name of state diagram.  
 SuggestedRemedy  
 ""... shall conform to the PD Type 2 Classification State diagram in ..."  
 Also line 53:  
 ""The PD Type 2 Classification State diagram specifies the externally ..."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 33 SC 3.4.2 P37 L14 # 95  
 Jetzt, John Avaya  
 Comment Type E Comment Status D  
 First define the PSE Type state variable.  
 Clarify the sentence in line 15.  
 SuggestedRemedy  
 ""The PSE Type state variable is the PSE Type that governs the electrical behavior of the Type 2 PD. Until successful Type 2 hardware classification ... as defined by Table 33-12 of the PD Type identical to the value of its PSE Type state variable."  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Still think the sentence could use more wordsmithing to make it clear.

Cl 33 SC 3.4.2.1 P37 L40 # 96  
 Jetzt, John Avaya  
 Comment Type E Comment Status D EZ  
 Reference table.  
 SuggestedRemedy  
 ""... in Table 33-11a."  
 Also in 33.3.4.2.2.  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 33 SC 3.2.3 P34 L7 # 115  
 Jones, Chad Cisco  
 Comment Type E Comment Status X  
 Figure 33-12a: This is not drawing in IEEE style. It will need redrawn in the IEEE manner.  
 Also want to ask if PD state diagram on pg 33 needs updated?  
 SuggestedRemedy  
 State Machine AdHoc to make new drawing - hold off on this to encompass all state machines?  
 Proposed Response Response Status W  
 see 64

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

CI 33 SC 3.3 P34 L 45 # 116  
 Jones, Chad Cisco  
 Comment Type E Comment Status D  
 '...calculated from the two voltage/current...' Implies that only two measurements are sufficient. This should be 'at least two' to match the text in 33.2.5.1.  
 SuggestedRemedy  
 change text to: ...calculated from the at least two voltage/current...  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 33 SC 3.5 P40 L 44 # 117  
 Jones, Chad Cisco  
 Comment Type E Comment Status D EZ  
 Units were changed from uF to mF in Item 6.  
 SuggestedRemedy  
 Change Units in Item 6 to uF  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 See 196  
 David Law comments that the symbol font file was inadvertently replaced and that fixing this file will fix this.

CI 33 SC 3.4.1 P36 L 9 # 118  
 Jones, Chad Cisco  
 Comment Type T Comment Status X  
 The text makes no statement about Type 1 PDs using Link Layer classification. For sure, manufacturers will do this.  
 SuggestedRemedy  
 Add the sentence ""A Type 1 PD may optionally choose to implement Type 2 Link Layer classification.""  
 Proposed Response Response Status W

CI 33 SC 3.4.1 P36 L 36 # 122  
 Jones, Chad Cisco  
 Comment Type T Comment Status X  
 Missing the legacy function that Type I PSEs treat Class 4 PDs as class 0. This is important for the new operation as Type 2 PDs rely on the fact that Type 1 PSEs will classify them as Type 0 and provide 13W.  
 SuggestedRemedy  
 add class 4 - type 1 - 0.44W to 12.95W to Table 33-10  
 Proposed Response Response Status W  
 -

CI 33 SC 3.4.2 P37 L 36 # 123  
 Jones, Chad Cisco  
 Comment Type T Comment Status X  
 The PD clause is missing the statement that a Type 2 PD will provide external notification when powered by a Type 1 PSE.  
 SuggestedRemedy  
 Add the sentence: 'A Type 2 PD that is powered by a Type 1 PSE shall provide external notification to the user signifying that the PD is not running at full power.'  
 Proposed Response Response Status W  
 -

CI 33 SC 3.4.1 P36 L 11 # 125  
 Jones, Chad Cisco  
 Comment Type T Comment Status X  
 The statements ""However, to improve power management at the PSE, a Type 1 PD may opt to provide a signature for Class 1 to 3."" and ""Type 2 PDs shall return a Class 4 classification signature in accordance with the maximum power draw..."" forces Type 2 PDs to only draw more than 12.95W. Why is it illegal for me to make a Type 2 PD that is Class 2 then uses LLDP to further refine the power consumption, say down to 5W? If I am forced to advertise Class 4 there will be situations where my PD could be powered by a PSE but won't be because the PSE has more than 7.0W but less than 15.4W left in reserve.  
 SuggestedRemedy  
 The text in 33.3.4.1 and 33.3.4.2 needs reworked to reflect this operating condition.  
 Proposed Response Response Status W  
 see 167

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

Cl 33 SC 2.2a P8 L 8 # 152  
Schindler, Fred Cisco

Comment Type TR Comment Status X

All references requiring a PSE to provide 15.4 W minimum do not match the state diagram shown in figure 33-6. Also see p24, item 14.

SuggestedRemedy

All references requiring a PSE to provide 15.4 W minimum need to be changed to match the state diagram shown in figure 33-6.

Proposed Response Response Status W

see 83, 236

Cl 33 SC 2.2a P8 L 15 # 153  
Schindler, Fred Cisco

Comment Type TR Comment Status X Vport

Existing thresholds in table 33-5 set design requirements that are not required for interoperability.

SuggestedRemedy

This specification shall provide requirements to ensure interoperability.

A legacy PD can be powered using PoE plus requirements. For example, a legacy PD is required to draw less than 400 mA (table 33-12, item 4) and a legacy PSE is required to limit current (table 33-5, item 8). If a PSE provides current that meets system safe operating (SOA) requirements, IEC 60950, and PD minimum power needs, then safety and interoperability are met with no design requirements imposed. Within the region between PD current needs and SOA current limits, a PSE system selects the design (current limit, current cut-off, and duration) that meets its markets needs. See Vport ad hoc current limit presentations for the latest proposed system current vs time limits.

Proposed Response Response Status O

Cl 33 SC 2.8.4 P25 L 33 # 156  
Schindler, Fred Cisco

Comment Type TR Comment Status X

The statements are not clear: is "a" or "b" required?

Allowing "b" to be used breaks interoperability because a PD can draw 400 mA.

Option "b" has no time or duty cycle constraint provided. These comments also apply to the new section 33.2.8.4a.

SuggestedRemedy

Allow options "a" or "b."

Have one statement for duty cycle and time that applies to both "a" and "b".

Correct the PD section on page 40 item 4 to show that current peaks are scaled with voltage.

The same comments apply to section 33.2.8.4a and table 33-12.

Proposed Response Response Status O

Cl 33 SC 2.8.6 P26 L 12 # 157  
Schindler, Fred Cisco

Comment Type TR Comment Status X

The text does not explicitly state that this applies to L2 and L1 classification mechanism.

SuggestedRemedy

Include a reference to 33.2.7a (L2 classification).

Proposed Response Response Status O

Cl 33 SC 2.7a P20 L 5 # 158  
Schindler, Fred Cisco

Comment Type TR Comment Status D

Resolution between L1 and L2 power classification mechanisms is not explicitly stated.

SuggestedRemedy

Indicate in the appropriate area(s) that L2 power values take precedence over L1 power values.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Need the appropriate text.

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

Cl 33 SC 2.8.8 P 26 L 25 # 159  
Schindler, Fred Cisco

Comment Type TR Comment Status X Vport

The specification requires that a port voltage remains above 44 V (Table 33-5, item 1) and that it limits current to 400 mA (Table 33-5, item 5). Both of these can not occur at the same time.

SuggestedRemedy

This specification shall provide requirements to ensure interoperability.

A device that draws more than 400 mA is not interoperable with this specification. The specification should not demand that PSE provide power for noncompliant devices. See the latest Vport ad hoc slides on "IEEE 802.3 concern" with PD and PSE interoperability during a PSE dv/dt event.

If a PSE provides current that meets system safe operating (SOA) requirements, IEC 60950, and PD minimum power needs, then safety and interoperability are met with less design requirements imposed. Within the region between PD current needs and SOA current limits, a PSE system selects the design (current limit, current cut-off, and duration) that meets its markets needs. See Vport ad hoc current limit presentations for the latest proposed system current vs time limits.

Proposed Response Response Status O

Cl 33 SC 2.8 P 23 L 49 # 160  
Schindler, Fred Cisco

Comment Type TR Comment Status X Vport

The specification requires that a PSE remove power based on an upper ICUT threshold and this level is not required to ensure interoperability or meet the safety specifications, and therefore, forces a design requirement.

SuggestedRemedy

This specification shall provide requirements to ensure interoperability.

A device that draws more than 400 mA is not interoperable with this specification. The specification should not demand that PSE provide power for noncompliant devices. See the latest Vport ad hoc slides on "IEEE 802.3 concern" with PD and PSE interoperability during a PSE dv/dt event.

Suggested solution: removing the ICUT maximum threshold. The same solution can be used for all PSE types.

Proposed Response Response Status O

Cl 33 SC 2.8 P 24 L 6 # 161  
Schindler, Fred Cisco

Comment Type TR Comment Status X Vport

The specification requires that a PSE remove power based on an upper Tovld threshold and this level is not required to ensure interoperability or meet the safety specifications, and therefore, forces a design requirement.

SuggestedRemedy

This specification shall provide requirements to ensure interoperability.

If a PSE provides current that meets system safe operating (SOA) requirements, IEC 60950, and PD minimum power needs, then safety and interoperability are met with less design requirements imposed. Within the region between PD current needs and SOA current limits, a PSE system selects the design (current limit, current cut-off, and duration) that meets its markets needs. See Vport ad hoc current limit presentations for the latest proposed system current vs time limits. The same value can be used for all PSE types.

Solution remove the Tovld maximum and use the Vport ad hoc SOA.

Proposed Response Response Status O

Cl 33 SC 2.8 P 24 L 18 # 162  
Schindler, Fred Cisco

Comment Type TR Comment Status X Vport

The specification requires that a PSE remove power based on an upper ILIM threshold and the selected level is not required to ensure interoperability or meet the safety specifications, and therefore, is unnecessarily restrictive.

SuggestedRemedy

This specification shall provide requirements to ensure interoperability.

If a PSE provides current that meets system safe operating (SOA) requirements, IEC 60950, and PD minimum power needs, then safety and interoperability are met with less design requirements imposed. Within the region between PD current needs and SOA current limits, a PSE system selects the design (current limit, current cut-off, and duration) that meets its markets needs. See Vport ad hoc current limit presentations for the latest proposed system current vs time limits. The same value can be used for all PSE types.

Solution remove the ILIM maximum and use the Vport ad hoc SOA. Also do not require that a PSE go into current limit. A minimum current vs time requirement for interoperability is provided in the Vport ad hoc presentations.

Proposed Response Response Status O

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

CI 33 SC 2.8.12 P27 L1 # 163  
 Schindler, Fred Cisco

Comment Type TR Comment Status X

The current imbalance requirements need to be reevaluated for PoE plus levels. In addition, millions of PoE ports are in use with cable lengths significantly less than 80 m. A short cable length increases the current imbalance to levels where transforms can not guaranty the 350uH inductance requirement of IEEE 802.3. Therefore, assumptions made by the IEEE should be re-evaluated.

SuggestedRemedy

A transformer ad hoc should be formed to create system requirements for Ethernet transforms that ensure compliant systems are acceptable to the broader market.

Proposed Response Response Status O

CI 33 SC 3.2.3 P34 L5 # 166  
 Schindler, Fred Cisco

Comment Type TR Comment Status X

Figure 33-12a The diagram needs to be redrawn to meet IEEE state diagram requirements.

SuggestedRemedy

Form an ad hoc to create the state diagram.

Proposed Response Response Status O

CI 33 SC 3.4.1 P36 L24 # 167  
 Schindler, Fred Cisco

Comment Type TR Comment Status X

Table 33-10 is not clear. Why is a range of maximum stated? Does a class 2 PD need to draw at least 3.84 W?

A type 2 PD should be able to produce all classes.

SuggestedRemedy

See my previous comments on definition of type. Allow a new PD to request the power it needs.

Proposed Response Response Status W  
 see 125

CI 33 SC 3.5 P40 L17 # 168  
 Schindler, Fred Cisco

Comment Type TR Comment Status X Vport

Table 33-12, item 1 is provides the minimum PD voltage at ICUT\_MIN. Therefore, a type-2 PD would expect 41 V when it draws 29.5W.

SuggestedRemedy

Change the type 2 PD minimum voltage to 41 V.

Proposed Response Response Status W  
 see 74

CI 33 SC 3.5 P40 L24 # 169  
 Schindler, Fred Cisco

Comment Type TR Comment Status X

The peak operating current specified in this section is Pport\_max/Vport. It is not clear that Pport\_max is the power the PD is classified to because the lport max of table item 4 contradicts this. For example, a class 3 PD can draw 6.49 W and with a 36 V input will draw 6.49/36 = 180 mA. The value in item 4 states 210 mA.

Also see a related comment on this same parameter. It is also not clear which lport is being referenced-table 33-12 has items 4 and 5 with the same name.

SuggestedRemedy

The task force needs to review these values and state what ensures interoperability.

Proposed Response Response Status O

CI 33 SC 3.5.4 P41 L37 # 170  
 Schindler, Fred Cisco

Comment Type TR Comment Status X

Some people in the task force are confused how to calculate duty cycle.

SuggestedRemedy

State that duty cycle is calculated using a sliding window with a 1 second width around any level above Pport\_max/Vport.

Proposed Response Response Status O

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

Cl 33 SC 2.7.1 P17 L 21 # 171  
 Schindler, Fred Cisco  
 Comment Type **TR** Comment Status **X**  
 A legacy PSE seeing class 4 will provide class 0 power. A new PSE seeing the new hardware classification mechanism and seeing class 4 will provide at least TBD power.  
*SuggestedRemedy*  
 Add text for a legacy PSE and new PSE response as shown above.  
 Proposed Response Response Status **O**

Cl 33 SC 4.1 P44 L 17 # 172  
 Schindler, Fred Cisco  
 Comment Type **TR** Comment Status **X**  
 We should be using the IEEE 802.3 clause 33 that was modified to reinstate DC high pot testing created during the IEEE 802.3au efforts.  
*SuggestedRemedy*  
 Use the work accepted in IEEE 802.3au see [http://grouper.ieee.org/groups/802/3/poep\\_study/public/may05/law\\_1\\_0505.pdf](http://grouper.ieee.org/groups/802/3/poep_study/public/may05/law_1_0505.pdf).  
 Proposed Response Response Status **W**  
 see 263

Cl 33 SC 4.4 P46 L 25 # 173  
 Schindler, Fred Cisco  
 Comment Type **TR** Comment Status **X**  
 This specification is not consistent with its common mode noise measurement requirements. Clause 33 is for a PSE specifies a range of 1 MHz to 100 MHz. Other clauses are for a MDI signal pairs and have no concept of measurement BW.  
 Testing during clause 33 development ensured data integrity with the constraints imposed. Reducing the BW of existing clause common mode measurements should not reduce the compliance of legacy systems. Requiring PSE to meet other clauses below 1 MHz places an unnecessary cost burden on the system.  
*SuggestedRemedy*  
 Modify other clauses or place a statement in clause 33 that allows the Ethernet MDI to use the clause 33 common mode requirements whether PoE power is present or not.  
 Proposed Response Response Status **O**

Cl 33 SC 3.5 P40 L 44 # 196  
 Darshan, Yair Microsemi Corporation  
 Comment Type **E** Comment Status **X** **EZ**  
 PD minimum capacitance should be 5uF and not 5mF  
*SuggestedRemedy*  
 Change to 5uF as in original document.  
 Proposed Response Response Status **W**  
 see 117

Cl 33 SC 2.8 P24 L 20 # 203  
 Darshan, Yair Microsemi Corporation  
 Comment Type **T** Comment Status **D**  
 Classification time T<sub>pd</sub> for type 1 and 2 PSE's are different.  
*SuggestedRemedy*  
 Split item 20 in table 33-5 for type 1 and type 2 PSEs:  
 Add the following data for type 2 PSE:  
 T<sub>pd</sub> min. = 12msec for PSE using layer 2 which uses only single finger.  
 T<sub>pd</sub> max.= 84msec for PSE using two fingers at max timing values.  
 Ad the following note in the additional information column: ""T<sub>pd</sub> does'nt include V<sub>class</sub> and mark tr,tf timing values which are derived from PD current load being used and system capacitance at the classification phase.""  
 Proposed Response Response Status **W**  
 PROPOSED ACCEPT IN PRINCIPLE.

Need to massage text. See 244

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

Cl 33 SC 3.5.4 P41 L46 # 206  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status X

Text is missing for type 2 PD.  
 The rms and dc value of Iport should be defined in similar way as in type 1 PD.

SuggestedRemedy

Change lines 48-49 as follows:  
 From ""The maximum IPort\_dc and IPort\_rms values for all operating VPort range shall be defined by the following equation: IPort\_max [mA] =12950/VPort.""

To ""The maximum IPort\_dc and IPort\_rms values for all operating VPort range shall be defined by the following equation:  
 for type 1 PD: IPort\_max [mA] =12950/VPort A.  
 for type 2 PD: IPort\_max [mA] =29500/VPort A.

Proposed Response Response Status O

Cl 99 SC P1 L1 # 219  
 Law, David 3Com

Comment Type E Comment Status D EZ

While the front matter is not within scope of any ballot please consider the following comments.

- [1] Add a TM symbol after IEEE 802.3at on its first instance in the top right.
  - [2] Add the text '(Amendment to IEEE Std 802.3(tm)-200X)' below standard designation in top right.
  - [3] Add a TM symbol after IEEE 802.3at on its second instance upper left.
  - [4] Change 'Draft: IEEE P802.3at ...' to read 'IEEE P802.3at ...'
  - [5] Change 'IEEE Standard ...' to read 'Draft standard ...'
  - [6] Correct the title to match the PAR - this reads 'Amendment: DTE Power via the MDI Enhancements'. It probably would be okay to spell out DTE even though the PAR doesn't - but need to delete the leading 'Enhanced'.
  - [7] Change 'Sponsor' to read 'Prepared by the'.
  - [8] Move the text 'This draft ...' to after 'IEEE Computer Society'.
  - [9] Update the boilerplate text to that found in the 2007 style manual, this reads 'This document is an unapproved draft of a proposed IEEE Standard. As such, this document is subject to change. USE AT YOUR OWN RISK! Because this is an unapproved draft, this document must not be utilized for any conformance/compliance purposes. Permission is hereby granted for IEEE Standards Committee participants to reproduce this document for purposes of international standardization consideration. Prior to adoption of this document, in whole or in part, by another standards development organization, permission must first be obtained from the IEEE Standards Activities Department. Other entities seeking permission to reproduce this document, in whole or in part, must obtain permission from the IEEE Standards Activities Department.'
  - [10] Add line numbers to front matter.
  - [11] Add an draft expiration date.
  - [12] While the style manual states that lower case roman numerals should be used for the front matter please change to arabic numerals so that the page number match the pdf page number.
- See [ [http://standards.ieee.org/guides/style/2007\\_Style\\_Manual.pdf#Page=42](http://standards.ieee.org/guides/style/2007_Style_Manual.pdf#Page=42) ] as well as IEEE 802.3ay draft.

SuggestedRemedy

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

See comment.

*Proposed Response*      *Response Status* **W**  
 PROPOSED ACCEPT.

---

*Cl* **99**      *SC*           *P*      *L*      # **220**  
 Law, David                3Com

*Comment Type* **E**      *Comment Status* **D**      *EZ*  
 Please update to the latest version of the comment tool that reads '802.3 Draft Comment Form' rather than the one in use which reads '802.22 Draft Comment Form'.

*SuggestedRemedy*  
 See comment.

*Proposed Response*      *Response Status* **W**  
 PROPOSED ACCEPT.

This has no impact on document. We need to point to the correct comment tool.

---

*Cl* **33**      *SC* **2.7.1**           *P* **17**      *L* **5**      # **223**  
 Law, David                3Com

*Comment Type* **E**      *Comment Status* **D**      *EZ*  
 Class 4 isn't just intended for Type 2 PDs, it is being used for Type 2 PDs.

*SuggestedRemedy*  
 Change the text '.. is intended for ..' to read '.. is used for ..'.

*Proposed Response*      *Response Status* **W**  
 PROPOSED ACCEPT.

---

*Cl* **33**      *SC* **2.7.1**           *P* **16**      *L* **50**      # **225**  
 Law, David                3Com

*Comment Type* **ER**      *Comment Status* **D**  
 The text here is a duplication of the 'may' and 'shall' statements found above and are therefore redundant.

*SuggestedRemedy*  
 Delete the text 'A Type 1 PSE may implement Type 1 hardware classification. A Type 2 PSE shall implement Type 2 hardware classification.'.

*Proposed Response*      *Response Status* **W**  
 PROPOSED ACCEPT.

---

*Cl* **33**      *SC* **2.7.1**           *P* **17**      *L* **1**      # **226**  
 Law, David                3Com

*Comment Type* **ER**      *Comment Status* **D**  
 The text describing the need for Type 2 hardware classification to be mandatory is a duplication of the text in 33.2.7 (page 32, line 31).

*SuggestedRemedy*  
 Delete the text found on lines 1 through 4.

*Proposed Response*      *Response Status* **W**  
 PROPOSED ACCEPT.

see 225



IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

CI 33 SC 3.5.2 P57 L 26 # 227  
 Law, David 3Com

Comment Type ER Comment Status D

Please follow the correct format for equations define in the IEEE Style guide [ [http://standards.ieee.org/guides/style/2007\\_Style\\_Manual.pdf#Page=29](http://standards.ieee.org/guides/style/2007_Style_Manual.pdf#Page=29) ]. Additional formatting information can be found at [ <http://www.ieee802.org/3/tools/editorial/requirements/scc14.html> ].

In addition for these specific equations it is not clear that the measurement using 20 Ohms for type 1 and 12.5 Ohms for Type 2 are mandatory. If they are, as I suspect they are, they should be shall statements.

*SuggestedRemedy*

This formatting needs to be carried on the entire draft or there is the possibility that SCC14 may try to force these changes during sponsor ballot and RevCom submittal - SCC14 is a mandatory coordination [ <http://standards.ieee.org/faqs/coor.html> ].

In this particular case the equation should be changed as follows:

[1] The text 'where:' followed by a list of variables with their definition should be provided.

[2] The letter symbols for physical quantities, mathematical variables, indices and general functions (as opposed to mathematical functions), are always printed in italic. In this case P, V and I should be italic. Subscripts and superscripts follow the same rules. Symbols for physical quantities, mathematical variables, indices and general functions are printed in italic. Therefore in this case 'Port' should be in upright font as it is not a symbol for a variable.

To address the measurement specification issue the resistances should be included in shall statements. This subclause would therefore read:

The specification for PPort in Table 33-12 shall apply for the input power averaged over 1 second. For a Type 1 PD PPort shall be measured when the PD is fed by 44 V to 57 V with 20 W in series. For a Type 2 PD PPort shall be measured when the PD is fed by 44 V to 57 V with 12.5 W in series. PPort is defined as:

$$PPort = VPort \times IPort$$

where

PPort is the input average power  
 VPort is the input voltage  
 IPort is the input current, either DC or RMS

See the file P802p3at\_sub\_33p3p5p2.FM supplied with comment file for full formatting example.

Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 33 SC 2 P3 L 31 # 229  
 Law, David 3Com

Comment Type T Comment Status X

It is not correct to state that all PSEs have to classify the PD. A Type 1 PD can still, optimally, choose not to do this.

*SuggestedRemedy*

Change '.. classify the PD ..' to read '.. optionally classify the PD ..'.

Proposed Response Response Status W  
 see 46, 267

CI 33 SC 2.1 P5 L 1 # 230  
 Law, David 3Com

Comment Type T Comment Status X

The drawing of the PD is not correct as it doesn't show that all PDs must be capable of accepting power on both Alternative A and Alternative B.

*SuggestedRemedy*

Replace PD in figure with the one in the file P802p3at\_fig\_33d4a.FM supplied with comment file.

Proposed Response Response Status W  
 find other comments like this

CI 33 SC 2.7.1 P17 L 16 # 231  
 Law, David 3Com

Comment Type T Comment Status X

There are Type 1 and Type 2 PSEs, Type 1 and Type 2 PDs, and there is Type 1 and Type 2 hardware classification. It is therefore unclear what the Type values in the 'Usage' column in Table 33-3 is in reference to. It looks like it is meant to refer to PSE type but Type 1 isn't correct in 0 to 3 as classification is optional, it is also silent on class 4 for a Type 1.

*SuggestedRemedy*

Consider removing 'Usage' column.

Proposed Response Response Status O

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

Cl 33 SC 2.3.6 P27 L 41 # 232

Law, David 3Com

Comment Type T Comment Status X

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

*SuggestedRemedy*

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

Proposed Response Response Status W

see 238

Cl 33 SC 2.7.2a P18 L 35 # 233

Law, David 3Com

Comment Type T Comment Status X

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

*SuggestedRemedy*

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

Proposed Response Response Status O

Cl 33 SC 2.1 P3 L 1 # 234

Law, David 3Com

Comment Type TR Comment Status D

The text states that 'Midspan PSEs shall use Alternative B when used in 10BASE-T or 100BASE-TX systems'. It then states that 'Midspan PSEs may support either Alternative A or B, or both when used in 1000BASE-T systems'. There is no definition of what a 10BASE-T, 100BASE-T or 1000BASE-T 'system' is, so in the following I will assume that simply it means that the link is operating with that type of PHY at each end.

Many ports these days are 10/100/1000BASE-T capable. Based on this, take the case of a 10/100/1000BASE-T non-PSE switch port that is connected to a Midspan. The Midspan connected to this port will have to be a 1000BASE-T capable Midspan or the link will never be able to operate at 1000BASE-T. The port however may not actually be operating at 1000BASE-T so this would seem to force the Midspan to be Alternative B to meet the mandatory requirement for 10BASE-T and 100BASE-T operation. In fact unless you can guarantee that the link the 1000BASE-T Midspan is connected in will only ever operate at 1000BASE-T, which I do not believe the Midspan has any way to force, the Midspan will have to be Alternative B.

The option of being able to build an Alternative A Midspan therefore seem unusable.

*SuggestedRemedy*

Either (i) mandate that all Midspans have to be Alternative B or (ii) allow 10BASE-T and 100BASE-T Midspans to be Alternative A as well as Alternative B. I suggest the second option on the basis that if it has been proved that 1000BASE-T Alternative A Midspans can be built while maintaining the link segment requirements they should be permitted for 10BASE-T and 100BASE-T operation as well. If this has not been proved then my first option has to be used.

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

CI 33 SC 2.7 P 32 L 25 # 237  
 Law, David 3Com

Comment Type TR Comment Status X

[a] It is difficult to follow the various different types of classification we now have and there is no overall introduction to guide the reader to what options there are and what features each option provides. There should be a broad introduction to all types of classification, and introduction to each specific type of classification then finally the details of the operation.

[b] Subclause 33.2.7 PSE Hardware classification of PDs' currently states that 'A PSE may remove power to a PD that violates the maximum power required for its advertised class.' which implies this only applies to hardware classification and that if a PD violates the maximum power it advertised through Link Layer classification it isn't permitted to do this. I don't believe this is correct and it is just as valid to do this for Link Layer classification. This text should therefore be moved so that it applies to all classification methods. See also other comment on this text.

SuggestedRemedy

Suggest that:

[1] Subclause 33.2.7 become an introductory clause that reads:

33.2.7 PSE classification of PDs

The ability of a PSE to classify a PD allows features such as load management to be implemented. There are two forms of classification, hardware classification and optional link layer classification. Hardware classification allows a PSE to classify a PD into one of a limited number of granular classes, this classification occurs once after a PSE successfully completes detection of a PD. Link layer classification allows a more granular classification that the initial hardware classification, this classification occurs continuously and provides the ability for the PD classification to change.

A PSE may remove power from a PD that violates the maximum power it has advertised it requires. This maximum power is initially derived from the advertised class during hardware classification and then, if implemented, subsequently updated by link layer classification.

[2] A new subclause 33.2.7.1a be inserted that reads:

33.2.7.1 PSE hardware classification of PDs

There are two types of hardware classification dependant of the PSE type, Type 1 hardware classification and Type 2 hardware classification.

A Type 1 PSE may optionally perform hardware classification. If a Type 1 PSE does perform hardware classification it shall use Type 1 hardware classification (see 33.2.7.2). If a Type 1 PSE does not classify the PD using hardware classification, then the Type 1 PSE shall assign the PD to Class 0.

A Type 2 PSE shall perform hardware classification and shall use Type 2 hardware

classification (see 33.2.7.2a). This is to ensure that a Type 2 PSE implementing only hardware classification can indicate its presence and identify the Type 2 PD's power requirements.

A successful hardware classification of a PD requires:

- a) Successful PD detection, and subsequently,
- b) Successful Type 1 or Type 2 Class 0-4 hardware classification.

The PSE hardware classification circuit should have adequate stability to prevent oscillation when connected to a PD.

Proposed Response Response Status O

CI 33 SC 2.7 P 16 L 28 # 238  
 Law, David 3Com

Comment Type TR Comment Status X

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

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

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

SuggestedRemedy

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

Proposed Response Response Status W  
 see 232

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

Cl 33 SC 2.7a.2 P21 L9 # 239  
 Law, David 3Com

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

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

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

Proposed Response Response Status O

Cl 33 SC 2.7.2 P17 L37 # 240  
 Darshan, Yair Microsemi Corporation

Comment Type E Comment Status X EZ  
 33.2.7.2a appears twice. ("Insert sections 33.2.7.2a, 33.2.7a; Table 33'4a:")

SuggestedRemedy  
 Editor to clarify

Proposed Response Response Status O

Cl 33 SC 2.8 P23 L50 # 241  
 Darshan, Yair Microsemi Corporation

Comment Type T Comment Status D Vport  
 Table 33-5 item 8:  
 Replace TBD with number.

SuggestedRemedy  
 $I_{cut\_max} = 0.72A * 0.4A / 0.35A = 0.823A$  (in order to keep the same 802.3af ratio)

In addition, we need to scan the draft and use the same term Icut instead Iovld or vise versa. (Icut is Iovld)

Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.

1. addressed by Vport AdHoc
2. Editor to scan for locations of Iovld in draft.

Cl 33 SC 2.8 P24 L11 # 242  
 Darshan, Yair Microsemi Corporation

Comment Type T Comment Status X Vport  
 Table 33-5 item 11.

Type 1 and Type 2 PSEs may have different TLIM\_MIN and TLIM\_MAX.

SuggestedRemedy  
 Split item 11 to type 1 and type 2 PSE.  
 Updated numbers/curves will be supplied by the Vport ad hoc.

Proposed Response Response Status O

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

Cl 33 SC 2.8 P 24 L 13 # 243  
 Darshan, Yair Microsemi Corporation

Comment Type T Comment Status X

Table 33-5 item 12:  
 Add test condition for Tr. It is not clear how to measure it as PSE alone.

SuggestedRemedy

To add test condition: ""At minimum capacitive load of  $I_{port\_transien} * 15\text{usec} / 44\text{V} = 5.3\text{uF}$   
 $I_{port\_transient} = 20\text{A}$  at the time range of 15usec. value came from the Vport ad hoc in  
 earlier version, it might be changed to 50A which will result with larger minimum test  
 capacitance. (Total PSE and PD Capacitance is required for the test).

Proposed Response Response Status O

Cl 33 SC 2.8 P 24 L 33 # 244  
 Darshan, Yair Microsemi Corporation

Comment Type T Comment Status X

Table 33-5 item 20:  
 Different classification max time for type 1 and type 2 PSEs

SuggestedRemedy

Split item 20 to type 1 and type 2 PSEs

Proposed Response Response Status W

see 203

Cl 33 SC 2.8.5 P 26 L 4 # 245  
 Darshan, Yair Microsemi Corporation

Comment Type T Comment Status D

There is no definition of the requirements for ILIM between 0V to 10V.  
 The proposal below was part of maintainance request 1162.

SuggestedRemedy

Change 33.2.8.5 item e from:

e) During startup, for PI voltages between 10V and 30V, the minimum IINRUSH  
 requirement is 60mA.  
 See Figures 33C.4, 33C.6.

To:

e) During startup, for PI voltages between 10V and 30V, the minimum IINRUSH  
 requirement is 60mA.  
 During startup, for PI voltages between 0V and 10V, the max IINRUSH requirement is as  
 specified by Table 33-5, item 10.  
 See Figures 33C.4, 33C.6 and 33C.6.1.

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

Cl 33C SC 1.7 P 85 L 6 # 246  
 Darshan, Yair Microsemi Corporation

Comment Type T Comment Status X

We need to update this part for supporting tests for foldback current limit tests in more general way as done for the startup mode.  
 (Comments from the maintenance group per MR # 1162.)

SuggestedRemedy

Change the following in Annex 33C clause 33C.1.7:

1. In Figure 33C.7 upper part: add a box labeled ""variable load"" in series to S1
2. Replace test procedure PSE-7 item 3 text from:

""3) Verify that Iport is within the limits shown in Figure 33C.4""

With ""3) Change the variable load in order to verify that Iport is within the limits of Figures 33C.4 and 33C6.1. Please note that the variable load type (resistive, constant voltage or other) depends on different PSE implementations.""

Clause 33C.1.4 PSE-4:

Change item 3 in PSE 4 from ""Verify that ..in Figure 33C.4"" to ""Verify that ..in Figures 33C.4 and 33C.6.1""

Change the note in the last two sentences in clause 33C.1.4 after item 6 in PSE-4:

From: ""Test setupÓÓÓÓexpected per Figure 33C.4.""

To: ""Test setupÓÓÓÓexpected per Figure 33C.4 and 33C.6.1.""

Proposed Response Response Status O

Cl 33 SC 2.7.2 P 18 L 44 # 248  
 Darshan, Yair Microsemi Corporation

Comment Type T Comment Status X

""Undefined"" is not clear enough in this case.

SuggestedRemedy

To add ..""and subject to system decision""

Proposed Response Response Status O

Cl 33 SC 2.8 P 24 L 10 # 250  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status X Vport

Table 33-5 item 10:  
 Replace TBDs with numberS.

SuggestedRemedy

ILIM\_MAX for the long term horizontal curve segment of the short circuit curve:

ILIM\_MAX=0.72\*0.45A/0.35A=0.925. A bit higher value is possible per Vport\_ad hoc findings.

ILIM\_MIN=ICUT\_MAX + margin to allow charging Cpd when PSE generates dv/dt AND PD load is at Icut\_max.

Proposed Response Response Status O

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

CI 33 SC 2.8.8 P 26 L 35 # 251  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status X

The specification allows foldback current limit implementations in startup mode as defined by 33.2.8.5.  
 MR request 1162 material and maintenance group attached drawing shows that the intent of the specification was to allow the same implementations during short circuit condition as well. However items d and e of 33.2.8.5 was not copied to 33.2.8.8 as should have done.

*SuggestedRemedy*

1. Move drawing 33C.4 or its updated version as a result of the Vport ad-hoc work to the normative section as it was in the early drafts of the IEEE802.3af.
2. Move drawing 33C.6 or its updated version as a result of the Vport ad-hoc work to the normative section as it was in the early drafts of the IEEE802.3af.
3. Add drawing 33C.6.1 to 33.2.8.8

4. Replace the following text:

The power shall be removed from the PI within TLIM, as specified in Table 33-5, under the following conditions:

- a) Max value of the PI current during short circuit condition.
  - b) Max value applies for any DC input voltage up to the maximum voltage as specified in item 1 of Table 33-5.
  - c) Measurement to be taken after 1ms to ignore initial transients.
- See Figure 33C.4 and Figure 33C.6.

With the proposed text: (items d and e are additions to previous text)

The power shall be removed from the PI within TLIM, as specified in Table 33-5, under the following conditions:

- a) Max value of the PI current during short circuit condition.
  - b) Max value applies for any DC output voltage up to the maximum voltage as specified in item 1 of Table 33-5.
  - c) Measurement to be taken after 1ms to ignore initial transients.
  - d) During short circuit condition, for PI voltages above 30V, the ILIM requirement is as specified in Table 33-5, item 10.
  - e) During short circuit condition, for PI voltages between 10V and 30V, the minimum ILIM requirement is 60mA as long as system decides to keep the port ON, and the maximum requirement is as specified in Table 33-5, item 10.
- During short circuit condition, for PI voltages between 0V and 10V, the minimum ILIM requirement is 0mA and the maximum requirement is as specified in Table 33-5, item 10.  
 See Figures 33C.4, 33C.6 and 33C.6.1."

5. Add the following notes after 33.2.8.8-e:

Notes:

1. Items d and e in 33.2.8.8 allows implementation of foldback current limit type in which ILIM requirement is decreased if Vport is

decreased below pre specified value.

2. Short circuit condition definition in IEEE802.3af is a case in which the port voltages is dropped below normal operating voltages as defined by table 33-5 items 1 and 2 due too load fault conditions that exceeds table 33-5 item 8""

6. Add the following note text after 33.2.8.5-e:

Note: items d and e in 33.2.8.5 allows implementation of foldback current limit type in which linrush requirement is decreased if Vport is decreased below pre specified value.

Foldback current limit is optional in the standard.

IMPACT ON EXISTING NETWORKS:

No impact. It is optional.

Proposed Response Response Status

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

Cl 33 SC 2.8.9 P 26 L 39 # 252  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status X  
 33.2.8.9 text is true for the case that system (PSE and PD) are within their normal voltage operating range however it is not clear from the text.  
 It is clear from figure 33C.4 and 33C.6 which are located in the informative section.

SuggestedRemedy

Replace 33.2.8.9 text :

""If a short circuit condition is detected, power removal from the PI shall begin within TLIM and be complete by TOff, as specified in Table 33'5. See Figure 33C.4 and Figure 33C.6.""

With:

For PI voltages above Vport\_lim as defined by table 33-5 item TBD, If a short circuit condition is detected, power removal from the PI shall begin within TLIM and be complete by TOff, as specified in Table 33'5.  
 See Figure 33C.4, Figure 33C.6. and Figure 33C.6.1""

For PI voltages below Vport\_lim as defined by table 33-5 item TBD, If a short circuit condition is detected, power removal from the PI may begin at any time of t<TLIM and be complete by TOff, as specified in Table 33'5.  
 See Figure 33C.4, Figure 33C.6. and Figure 33C.6.1""

Proposed Response Response Status

Cl 33 SC 2.5 P 26 L 2 # 253  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status X Vport  
 The 30V value in 33.2.5 items d) and e) and other related parts of this specification can be modify for enhanced flexibility.

SuggestedRemedy

Suggested that Vport\_lim will (as defined in other comments) be changed from Vport\_lim=30V to:

(from Vpd\_OFF starting point, the preferred option):

Vport\_LIM at PSE side for Type 1 PSE: 30V minimum, 38V max.  
 Vport\_LIM at PSE side for Type 2 PSE: 30V minimum, 40.28V max.

Rational

Vpse = Vpd + Cable Voltage loss

PD is definitely OFF at 30V.

Cable loss is 0.4\*20R=8V for Type 1.

Cable loss is 0.72\*0.4A/0.35A\*12.5=10.28V for Type 2.

Proposed Response Response Status



IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

CI 33 SC Table 33-12 P 40 L 1732 # 254  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status X Vport  
 Table 33-12 items 1 and 4: Need to update numbers

SuggestedRemedy

Item 1: Type 2 PD minimum voltage is 50v-12.5\*0.72\*0.4/0.35=39.71V and not 40V.

Item 4: Peak operating current at class 4 for type 2 PD:

Considerations:

- For maximum PD available power).  
 The need is with high probability.

$0.72A * 0.4 / 0.35 = 0.823A$ . (Same Icut/Iport ratio as in 802.3af)

Regarding the issue of supporting PSE current transient due to dv/dt simultaneously with PD peak current=823mA when PSE is using constant current limit near Icut\_max so net charging current is zero, the following options are suggested:

Option 1:

To define that PSE ILIM\_MIN = PSE'S icut\_max + Margin.  
 The margin is the current required to charge Cpd (<50mA).

Option 2:

The support of PSE dv/dt is implementation specific.  
 Rational:

1. It is enough to define that PSE is required to support current transients due to PSE dv/dt up to 7V at a slew rate of TBD. At this point it is depended only at the PSE how to implement this support. The PD is not a player that need to be defined. It is already defined by Cpd=180uF border line.

2. If PSE choose to implement energy based current limit, then it will work within the 2A peak and 3msec time as suggested by the Vport\_ad hoc.

3. If PSE choose to use constant current limit, it will choose the right ILIM and TLIM pairs to support this scenario.

4. There is no issue with PD load transient current due to the fact that per the concept of type 1 PD which is suggested for type 2 PD, the max peak current at the PD is Icut\_max and it is limited to 50msec, 5% duty cycle max.

5. There is no added cost as was proven in 802.3af:

5.1 The max. average current is always 720mA (350mA in 802.3af)

5.2 The max. RMS current is 720mA rms. (350mA in 802.3af)

Hence no additional resistive loss in the system.

5.3 As a result the total average power is always 29.5W max. (12.95W in 802.3af)

5.3.1 The specification is explicitly define that the total PD input power shall not exceed Pport\_max 12.95/(29.5W) average over 1sec.

Proposed Response Response Status W  
 again, why ratio.

CI 33 SC 2.3.4 P 9 L 22 # 255  
 Darshan, Yair Microsemi Corporation

Comment Type TR Comment Status X Vport

During ""Short Circuit"" Condition i.e. when PSE and PD are no longer at their operating voltage range, there is no technical need to keep PSE port on for TLIM.

It creates many problems such:

- Prevents meeting item 21 in table 33-5, Ted (Time delay between consecutive start ups).
- Excessive heat.

See more details in MR #1167.

SuggestedRemedy

To allow the PSE to turn the port to OFF mode when Vport < at any t < TLIM\_MIN.

Remedy steps:

- Add new variable option\_vport30 to 33.2.3.4. It will be an optional variable.

option\_vport30

This variable is indicating If PSE port voltage is out of operating range during normal operating mode.

Values:

False: Vport is above Vport\_LIM = TBD1 for Type 1 PSE, TBD2 for type 2 PSE  
 True: Vport is below Vport\_LIM = TBD1 for Type 1 PSE, TBD2 for type 2 PSE

- Add to table 33-5 new parameter Vport\_LIM for type 1 and type 2 PSE.

Type 1 PSE values: 30V min TBD1 max.

Type 2 PSE values: 30V min TBD2 max.

- Add the following text to 33.2.8.8 after item e. Items d and e are reserved for maintenance request 1162).

""f) During short circuit condition, for PI voltages below Vport\_LIM the PSE may turn to IDLE state at any time t < TLIM\_MIN. ""

- Change state diagram (figure 33-6) per the attached drawing.

Using this optional variable in the state diagram will fix the problem by

changing the inputs to ERROR\_DELAY\_SHORT state

from: tlim\_timer\_done

to: Tlim\_timer\_done + !lim\_timer\_done\*option\_vport30\*power\_applied )

Effect on legacy equipment: NONE since the variable is optional.

Proposed Response Response Status O

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

CI 33 SC 33.2.9 P27 L 20 # 258  
 Law, David 3Com

Comment Type T Comment Status X

A Type 2 PSE has to provide hardware classification (see 33.2.7). Due to this the only case where hardware classification will not occur is a Type 1 PSE where hardware classification is optional.

SuggestedRemedy

Change the text '.. a PSE does not provide either of the hardware classification functions specified in ..' to read '.. a Type 1 PSE does not provide the optional Type 1 hardware classification specified in ..'.

Proposed Response Response Status W

A type 2 PSE does NOT have to perform L1 class

CI 33 SC 33.3.4.2 P37 L 14 # 259  
 Law, David 3Com

Comment Type T Comment Status X

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

SuggestedRemedy

Perform the following change: [a] Delete the first sentence of the third paragraph of subclause 33.3.4.2. Text currently reads 'Until successful Type 2 hardware classification or link layer classification has completed, a Type 2 PD's PSE Type state variable is set to Type 1.'. [b] Delete subclause 33.3.4.2.2. [c] Insert new subclause 33.3.4a, renumber as necessary. The content of this new subclause should cover the areas in [a] and [b] as well as clarify the text. 33.3.4a PSE type classification A Type 2 PD shall classify the PSE Type as either Type 1 or Type 2. The default value of PSE Type shall be Type 1. After a successful Type 2 hardware classification or link layer classification has completed the PSE Type shall be set to Type 2. The PD shall reset the PSE Type to Type 1 when the voltage at the PI is less than or equal to VReset\_lo max. Once a Type 2 hardware classification or link layer classification has completed a Type 2 PD shall reset the PSE Type to Type 1 if the voltage at the PI is less than or equal to VReset\_hi min.

Proposed Response Response Status O

CI 33 SC 33.3.4a P37 L 52 # 260  
 Law, David 3Com

Comment Type T Comment Status D

What about Type 1 PDs - I see no reason what they shouldn't also optionally support link layer classification - if for example they wish to support more guarantee power management. I however agree that a Type 1 PD that supports link layer management shall support TIA 1057.

SuggestedRemedy

Change the text 'A type 2 PD ..' to read 'Type 2 PDs, as well as Type 1 PDs that optionally implement link layer management, shall support ..'.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 33 SC 33.2.9 P27 L 26 # 261  
 Law, David 3Com

Comment Type T Comment Status D

The text states that '.. and the mechanism for obtaining that additional information, is beyond the scope of this standard ..'. I do not believe that is true anymore due to the link layer classification protocol.

SuggestedRemedy

Reword to acknowledge link layer classification.

Proposed Response Response Status W

PROPOSED ACCEPT IN PRINCIPLE.

Need text:

CI 33 SC 33.3.1 P31 L 41 # 262  
 Law, David 3Com

Comment Type TR Comment Status D

I do not believe there has been any vote to permit powering a PD simultaneously through Mode A and Mode B.

SuggestedRemedy

Removed the change and restore the text to read 'specifically not allowed by' until a vote has been taken to make this change.

Proposed Response Response Status W

PROPOSED ACCEPT.

IEEE P802.3at D0.2 DTE Power via MDI Enhancements comments

---

Cl 33 SC 33.4.1 P44 L4 # 263  
Law, David 3Com

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

Subclause 33.4.1 and its subclauses do not contain the updated text from IEEE Std 802.3-2005/Cor1-2006 DTE Power via MDI Isolation corrigendum.

*SuggestedRemedy*

Update this subclause with the text from IEEE Std 802.3-2005/Cor1-2006.

Proposed Response Response Status **W**

PROPOSED ACCEPT.

See 172

---

Cl 33 SC 3.1 P31 L41 # 264  
McCormack, Michael Texas Instruments

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

The struck through and replacement text was not agreed by the committee in a vote. This is a major issue for cost and complexity of future PDs. There are numerous IP claims against four pair where none of the filing / patent holders have disclosed terms or promised no enforcement.

*SuggestedRemedy*

Remove the new text, replace the original.

Proposed Response Response Status **O**