Cl **00** *SC* **00** *P* *L* # 141

Thomas Dineen Dineen Consulting

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

Delete or modify Objectives 5, 9 10, 11, and 12! Objective should be clear, crisp, and concise thus making it straight forward for the reviewer of your draft to determine if they have been met! Keep in mind here that I consider this comment to be well within the proper scope of a WG Ballot in that part of the ballot review involves a determination of whether the draft meets the objectives.

Keep in mind here that I am not opposed to you project, I am concerned however that you objective list is bloated with non specific items that should be deleted of replaced with something more specific.

By this point in the project your "research", "vigorous pursuit", and "revisiting" should be concluded with concise results that can be boiled down to proper objectives.

"Objective 5 The enhanced standard will provide the maximum power to the PD as allowed within practical limits"

Objective 5 should be deleted because it is redundant to objective 6 and yet less specific thus offering no value. Also Objective 5 is in appropriate and non specific.

"Objective 9 Research potential extension of power classification to support PoEPlus modes"

Objective 9 is an inappropriate and non specific objective and should therefor be deleted or replaced. We do not specify "research" in an objective. How is the reader of the draft to determine if the research has been completed properly and thus the objective met? You either support the extension of power classification or you do not. No research Please delete or replace with something more specific.

"Objective 10 PoE Plus will vigorously pursue supporting the operation of midspan PSEs for 1000BASE-T."

Objective 9 is an inappropriate and non specific objective and should therefor be deleted or replaced. We do not specify "vigorously pursue" in an objective. How is the reader of the draft to determine if the if the appropriate degree of vigor has been achieved and thus the objective met? You either specify operation with 1000BASE-T or you do not. No research. Please delete or replace with something more specific.

"Objective 11 Research the operations of midspan and endpoint PSEs for 10GBASE-T including providing cable heating data for evaluation by IEEE P802.3an."

Objective 11 is an inappropriate and non specific objective and should therefor be deleted or replaced. We do not specify "research" in an objective. How is the reader of the draft to determine if the research has been completed properly and thus the objective met? You either specify operation with 10GBASE-T or you do not. No research. Please delete or replace with something more specific.

"Objective 12 That IEEE 802.3af power over the MDI isolation requirements be revisited as part of the PoE Plus work"

Objective 12 is an inappropriate and non specific objective and should therefor be deleted or replaced. We do not specify "revisited" in an objective. How is the reader of the draft to determine if the revisiting has been completed properly and thus the objective met? You either specify MDI isolation requirements or you do not. No revisits. Please delete or replace with something more specific.

SuggestedRemedy

Delete or modify comments as discussed above.

Response *Response Status* **U**

REJECT.

It is absolutely correct that it is in scope to comment on if the draft meets the objectives - it isn't in scope to comment on the objectives themselves - this is done during the adoption of the objectives by the Working Group.

The comment contents have been referred to the P802.3at TF and 802.3 WG chairs via e-mail for further disposition but as comment makes no specific recommendation for changes to the draft it is rejected.

Cl **01** *SC* **01.4** *P* **13** *L* **28** # 274

Barrass, Hugh Cisco

Comment Type **ER** *Comment Status* **A** *power levels*

"A PSE or PD that is designed for IEEE Std 802.3T-2005 power levels"

IEEE Std 802.3-2005 will shortly be replaced by a newer revision. That revision will, in turn be replaced by another revision (probably including this amendment).

Do not refer to a specific revision of 802.3. If you wish to specify a power level, then state the power level.

SuggestedRemedy

Replace

"A PSE or PD that is designed for IEEE Std 802.3T-2005 power levels"

with

"

A PSE or PD that is designed for power levels between 0.5 and 12.95W (at the PD)"

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Replace

"1.4.x Type 1: A PSE or PD that is designed for IEEE Std 802.3™-2005 power levels."

with

"1.4.x Type 1 PD: A PD that advertizes a power draw less then or equal to 12.95W (at the PD).

1.4.x Type 1 PSE: A PSE that is designed to support a Type 1 PD."

See 275, 404

Cl **01** *SC* **01.4** *P* **13** *L* **30** # 275

Barrass, Hugh Cisco

Comment Type **ER** *Comment Status* **A** *power levels*

"A PSE or PD that is designed for IEEE Std 802.3T-2005 power levels"

IEEE Std 802.3-2005 will shortly be replaced by a newer revision. That revision will, in turn be replaced by another revision (probably including this amendment).

Do not refer to a specific revision of 802.3. If you wish to specify a power level, then state the power level.

SuggestedRemedy

Replace

"A PSE or PD that is designed for IEEE Std 802.3T-2005 power levels"

with

"A PSE or PD that is designed for power levels greater than 12.95W (at the PD)"

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Replace

"1.4.x Type 2: A PSE or PD that is designed for greater than IEEE Std 802.3™-2005 power levels."

with

"1.4.x Type 2 PD: A PD that advertizes a power draw greater than 12.95W (at the PD).

1.4.x Type 2 PSE: A PSE that is designed to support either a Type 1 or a Type 2 PD."

see 274, 404

Cl **01** *SC* **1.3** *P* **13** *L* **11** # 364

Piers Dawe Avago Technology

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

As http://ieee802.org/3/at/public/mar08/3n864.pdf says, there is an approved work item proposal (NWIP - like a PAR) for developing ISO/IEC TR 29125; the NWIP is at http://isotc.iso.org/livelink/livelink/fetch/2000/2122/327993/755080/1054034/2541793/JTC001-N-8766.pdf?nodeid=6786149 but I could not see any sign that even a draft TR exists yet.

SuggestedRemedy

As this TR is essential for Type 2 ????CHECK****, a draft of P802.3at cannot be considered technically complete until it exists

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE 478

Cl **30** *SC* **30.12.2.1.9** *P* **21** *L* **6** # 488

Ganga, Ilango Intel

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

This attribute returns the PD power value of the remote system, hence change the following sentence as suggested

"where X is the decimal value of aLLDPPoEPLocActualPDPowerValue"

SuggestedRemedy

Change to:

where X is the decimal value of aLLDPPoEPRemActualPDPowerValue

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Correction done but naming changed per Diab/Thompson Motion passed at 2:51 on 6/27/2008

Cl **33** *SC* **33.1** *P* **23** *L* **33** # 374

Piers Dawe Avago Technology

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

Text says 'The detection and powering algorithms are likely to be compromised by cabling that is multipoint as opposed to point-to-point, resulting in unpredictable performance and possibly damaged equipment.' while Fig 33-1 and 33-2 shows a medium running past the MDI, shared-medium style.

SuggestedRemedy

First, is 'multipoint' the right word? Isn't that how PONs are? Second, if DTE Power should not be used on shared-medium Ethernet, show the medium coming to but not past the MDI/PI in Fig 33-1 and 33-2

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

PONs are not an issue as we don't support power over optics.

Fig 33-1, 33-2 and 33-3 need updated with 'zig-zag' lines running off to the right and by moving the left hand end of the medium line closer to the MDI.

176, 375

Cl **33** *SC* **33.1.3** *P* **25** *L* **10** # 332

Young, George AT&T

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

In Figure 33-3, the depiction of the PI interface is misleading. The arrow associated with the PI identification is pointing to the medium.

SuggestedRemedy

The PI labeled arrow should rather be pointing to the connection from the PSE to the medium, in the same manner as the MDI identification arrow appears in the left side of this figure.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

The definition of PI is "The mechanical and electrical interface between the Power Sourcing Equipment (PSE) or Powered Device (PD) and the transmission medium."

The PI arrow is in the correct location as this is the interface for both data and power for the Midspan in the diagram.

Extend the dashed line box through medium to indicate that the medium passes through the Midspan for unpowered pairs.

Cl **33** *SC* **33.1.3** *P* **25** *L* **8** # 380

Piers Dawe Avago Technology

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

Fig 33-3 shows a medium running through a "midspan" and attached to a midspan PSE. The implication is that both AC signals and DC voltages and currents flow through past the midspan PSE. Figure 33-6 shows the PSE powering one side only, and the other isolated by transformers.

SuggestedRemedy

Change one or the other diagram to be consistent, and review the text. If one-sided powering is the norm, then the midspan PSE has two interfaces, a MDI and a MDI/PI.

Response *Response Status* **U**

REJECT.

A midspan doesn't have a PHY, therefore it doesn't have an MDI. This is our best effort to illistrate a midspan. Commentor is welcome to submit his own drawing.

Cl **33** *SC* **33.1.4** *P* **25** *L* **32** # 381

Piers Dawe Avago Technology

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

A system? What does that mean? A switch? Or just that portion powered/powering via a single MDI?

SuggestedRemedy

Be clearer

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Change
"A system defined as either Type 1 or Type 2..."

to
"A power system, consisting of a single PSE, link segment and a single PD, defined as either Type 1 or Type 2..."

Cl **33** *SC* **33.1.4** *P* **25** *L* **40** # 391

Piers Dawe Avago Technology

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

Maximum DC cable current, about half an ampere? is that per cable (bundled) as it says, or per conductor, or per MDI (two conductors each way)?

SuggestedRemedy

Be clearer

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Add footnote: Icable is the maximum output current per PI in normal powering mode.

Cl **33** *SC* **33.1.4** *P* **25** *L* **43** # 518

Law, David 3Com

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

If my other comment to delete the rows 'Channel DC loop resistance' and 'Cable type' from Table 33-1 is not accepted the entries for 'Cable type' need to be corrected.

SuggestedRemedy

[1] Make it clear that these cable entries provide the minimum cabling requirements - since the other two rows in this table provide maximum values.

[2] Is it really correct that we require the use of Cat 3 cabling for Type 1 operation, remember that 10BASE-T operates over DIW as well as Cat-3. In addition we should fully specify Cat-3.

[3] We should fully specify what we mean by Class D since ISO/IEC 11801:1995 Class D is Cat 5 whereas ISO/IEC 11801:2002 is Cat 5e. Further even meeting ISO/IEC 11801:1995 Class D is not enough - we place an additional requirement that the loop resistance has to be 25 Ohms of less. This fact should be footnoted.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Change Table 33-1 to
Parameter | Symbol | Units | Type 1 value | Type 2 value
Maximum DC cable current | ICable | A | 0.35 | 0.6
Maximum Channel DC pair loop resistance | RCh | Ω | 20 | 12.5
Minimum Cable type | | | UTP per Clause 14 | Class D

500, 413

Cl **33** *SC* **33.1.4.1** *P* **25** *L* **52** # 489

Ganga, Ilango — Intel

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

PICS missing for 33.1.4.1 Type 2 cabling requirement

SuggestedRemedy

Add PICS for 33.1.4.1

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE by acceptance of "802.3at draft PICS 0.3.pdf" by Gerry Nadeau which are accepted by a vote of

Y: 15, N: 0, A: 2

Cl **33** *SC* **33.1.4.1** *P* **26** *L* **1** # 124

Frazier, Howard — Broadcom

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

The note that appears at the top of page 26 is redundant. The content of the note is already captured in the normative text that appears in the second sentence of 33.1.4.1.

SuggestedRemedy

Delete the note. Notes are informative, and this note adds nothing to the normative text.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE 392, note was deleted

3, 140, 447,501, 507, 520

Cl **33** *SC* **33.1.4.1** *P* **26** *L* **1** # 501

Diab, Wael — Broadcom

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

I am not sure what value the note is adding here. We are either saying that the cabling meets (a) ISO Class D 1995 AND TIA 568-B.2, in which case the note is redundant OR (b) ISO Class D 1995 and the note there is informative about the TIA 5e cabling

SuggestedRemedy

If we are doing (b) then please delete the TIA reference in the body of the section and retain the NOTE. If we are doing (a) then please delete the note.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE 392, note was deleted

Cl **33** *SC* **33.1.4.2** *P* **26** *L* **9** # 503

Diab, Wael — Broadcom

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

This note has some innacuracy and does not add any value. Moreover, it is restructing in terms of what implementations out of the scope can and cannot do. For instance it talks about cables not cabling systems which would include connectors. Furthermore, I would expect the TR being referenced to discuss the parameters underwhich the derating points were given.

SuggestedRemedy

Please delete the NOTE.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE 509

Cl **33** *SC* **33.2** *P* **27** *L* **10** # 125

Frazier, Howard — Broadcom

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

This sentence:

Characteristics, such as the losses due to overvoltage protection circuits, or power supply inefficiencies, after the PI connector are
not accounted for in this specification.

makes no sense. 33.1.3 makes it clear that the PI is the demarcation between the PSE (or the PD) and the medium.

SuggestedRemedy

Delete the sentence.

Response *Response Status* **U**

ACCEPT.

Cl **33** *SC* **33.2.10** *P* **53** *L* **42** # 128

Frazier, Howard — Broadcom

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

The text of the second paragraph predates L2 classification, and seems to ignore it. At the very least, there should be a forward pointer to the subclause on L2 classification.

SuggestedRemedy

Add to the end of the second paragraph:
See 33.7 for a description of Data Link Layer classification.

Response *Response Status* **U**

ACCEPT.

Cl **33** *SC* **33.2.2** *P* **27** *L* **28** # 502

Diab, Wael — Broadcom

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

The BLW issue with 100BASE-TX was avoided in 802.3af by disallowing Alternative A solutions. I support work to allow 1000BASE-T and Alternative A 100BASE-TX to work on condition that it does not comprimise the integrity of the channel or modify the characteristics of the signal that the PHY sees at its receive MDI from the link partner.

SuggestedRemedy

Either disallow Alternative A midspans or show that the constraints placed on an Alternative A midspan yield a channel and receive characteristics that is identicle to that without a midspan for a 100BASE-TX link or a 1000BASE-T link.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Add Note: See Section 33.4.8.2 for Alternative-A Midspans.

frs: Suggest referencing section 33.4.8.2, p81 for alternative-A midspans.

Cl **33** *SC* **33.2.3** *P* **32** *L* **50** # 126

Frazier, Howard — Broadcom

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

This sentence:

Implementors are free to implement either alternative or both.

is redundant. The freedom conveyed in this sentence is stated in the preceeding sentence, as well as in 33.2.1.

SuggestedRemedy

Delete the sentence.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE 331.

Cl **33** *SC* **33.2.3** *P* **32** *L* **50** # 72

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **R** *4P*

Draft 3.0
The standard should not preclude implementations that are using both alternative A and B due to the following reasons:
a) It is out of scope of the standard to limit implementations that meets standard requirements.
b) There are no interoperability issues if PD gets power from 2x 2 pairs power source especially if all pairs are comming from the same port/segment/PSE type 2. It is the load responsibility (PD) to meet the 2P specification for each 2P. Implementation methods are out of scope of the standard.
c) It is economically and technically feasible as shown in numerous presentations and current products at the market, however these criteria's is not required for allowing 2x2P operation due to the fact that there are other alternatives allowed by the standard and the vendor has choices...
e) There are products in the market that already are using the 2 x 2P implementation.
f) There is huge market for higher power then 30W over 2P.
g) There is no additional cost issue. The $/watt cost is even lower then in 2P system as shown in previous meeting presentations.
h) For outdoor applications, temperature rise issues of the cables when using 60degC cabling system grade can be solved if the same power is delivered over 2 x 2P which is an easy solution for thermal issues.
i) Users will do it any way to utilize the full capability of the existing infrastructure.
J) In previous meeting switch and PHY vendors wanted the ability to use the same cable which consists of 4 pairs to support two PDs that each one of them is connected to a 2P system. The current text precludes using this feature.

SuggestedRemedy

Change from:
"A PSE shall implement Alternative A or Alternative B, or both, provided the PSE meets the constraints of 33.2.3. Implementers are free to implement either alternative or both. While a PSE may be capable of both Alternative A and Alternative B, PSEs shall not operate both Alternative A and Alternative B on the same link segment simultaneously."

To:
"A PSE shall implement Alternative A or Alternative B, or both, provided the PSE meets the constraints of 33.2.3. Implementers are free to implement either alternative or both.
Note: Configurations in which simultaneous operation of ALT A and ALT B are achived when ALT A and ALT B are coming from different PI segments are specifically not allowed by this standard".

In addition, in 33.3.1 page 33 line 42 modify the text to be:
"NOTE-PDs that implement only Mode A or Mode B are specifically not allowed by this standard. PDs that may simultaneously receive power from both Mode A and Mode B are out of scope of this standard."

Response *Response Status* **U**

REJECT.

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

Cl **33** *SC* **33.2.4.4** *P* **35** *L* **47** # 490

Ganga, Ilango — Intel

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

PICS missing for PSE shall meet at least one allowable variable..

SuggestedRemedy

Add corresponding PICS

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE submission from Gerry Nadeau.

Cl **33** *SC* **33.2.8** *P* **44** *L* **25** # 127

Frazier, Howard — Broadcom

Comment Type **TR** *Comment Status* **A** *class pse*

Where is "mutual identification" defined? What constitutes mutual identification? Does it correspond to a state in a state machine?

SuggestedRemedy

Provide an unambiguous definition of mutual identification

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Mutual Identification is partially defined on page 44, L 27.

"Mutual identification is the mechanism
that allows a Type 2 PD to differentiate Type 1 PSEs from Type 2 PSEs."

Add this sentence afterward: "Additionally mutual identification allows Type 2 PSEs to differentiate between Type 1 and Type 2 PDs."

Cl **33** *SC* **33.2.8** *P* **45** *L* **14** # 203

Tziony, Noam Microsemi

Comment Type **TR** *Comment Status* **A** *class pd*

Table 33-5
For the following Permutation:
PD Type: Type-2
Physical Layer classification: None
Data Link Layer classification: No
The Table says that:PD allowed?: N/A which doesnt make sense due to the fact that this is a Type 2 PD and it must support L1 and L2.

SuggestedRemedy

Change to:
PD allowed?: No OR explain what does it mean N/A or explain how to read this Table?

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

N/A is confusing.

Change table as follows:

PD Allowed?
N
Y
N
N
N (Was N/A)
N (Was N/A)
Y
Y
Y
Y
N (Was N/A)
N (Was N/A)

Cl **33** *SC* **33.2.8** *P* **45** *L* **16** # 204

Tziony, Noam Microsemi

Comment Type **TR** *Comment Status* **A** *class pd*

Table 33-5
For the following Permutation:
PD Type: Type-2
Physical Layer classification: None
Data Link Layer classification: Yes
The Table says that:PD allowed?: N/A which doesnt make sense due to the fact that this is a Type 2 PD and it must support L1 and L2.

SuggestedRemedy

Change to:
PD allowed?: No OR explain what does it mean N/A or explain how to read this Table?

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE 203.

Cl **33** *SC* **33.2.8** *P* **45** *L* **23** # 205

Tziony, Noam Microsemi

Comment Type **TR** *Comment Status* **A** *class pd*

Table 33-5
For the following Permutation:
PD Type: Type-1
Physical Layer classification: None
Data Link Layer classification: No
PD allowed?: N/A

Type-1 PD without Physical Layer classification is not allowed. Class 0 is a class and PD without special classification hardware, if it presents 0 to 4mA it is class zero. So in this case PD is not allowed.

SuggestedRemedy

Change to:
PD allowed?: No OR explain what does it mean N/A or explain how to read this Table?

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE 203

Cl **33** *SC* **33.2.8** *P* **45** *L* **25** # 206

Tziony, Noam — Microsemi

Comment Type **TR** *Comment Status* **A** *class pd*

Table 33-5
For the following Permutation:
PD Type: Type-1
Physical Layer classification: None
Data Link Layer classification: Yes
PD allowed?: N/A

Type-1 PD without Physical Layer classification is not allowed. Class 0 is a class and PD without special classification hardware, if it presents 0 to 4mA it is class zero. So in this case PD is not allowed.

SuggestedRemedy

Change to:
PD allowed?: No, OR explain what does it mean N/A or explain how to read this Table?

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE 203

Cl **33** *SC* **33.2.9** *P* **48** *L* **15** # 482

Geoff, Thompson — Nortel

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

Table 33-9, also line 20 and other resulting places in the draft.
The proposed 50 volt minimum value, while admittedly allowing for more delivered power to the PD, is a significant hit in system cost relative to the carefully chosen equivalent value of Vport for 802.3af.
The new voltage means that PSEs can no longer be operated directly from battery systems (48 volt nominal) commonly found in telephone installations and DC communications UPS systems. Also, line operated power supplies with 48 volt nominal are a commonly available commodity product whose cost is driven by markets larger than that of PoE+. The new voltage level would require new power supplies for both boost conversion from 48 Vnom and from line voltage to the input side requirements of the porposed PoE+ PSEs. This will be a significant cost handicap, additional energy inefficiency and specialty supply handicap to implementation as well as negative hit to the five criteria.

SuggestedRemedy

Change Vport Min for PSE Type 2 operation to 44 volts.
Make the requisite changes to the rest of the draft including delivered power to the PD that would result from this change.

Response *Response Status* **U**

REJECT.

Presenter gave presentation and TF voted:
Y:3, N:21, A:8

no support for change

June 2008, NH Interim:
straw poll: Would you support this significant change request if commentor brought fully developed text to include in the standard?

Y: 3, N: 13, A: 6

The TF feels that the suggested remedy does not fully develop the effects of lowering the minimum PSE port voltage to 44V.

Straw Poll: Would you support this new feature request if commentor brought fully developed text to include in the standard?

Y: 2, N: 9, A: 6

Defer for resolution proposal from Darshan and Thompson

During the May 2006 Interim, the IEEE 802.3at task force voted to adopt 50 V as the

minimum Vport.
Y: 37 N:0 A: 1
This was done after extensive evaluation of the system tradeoffs.

Cl **33** *SC* **33.2.9.5** *P* **50** *L* **19** # 522

Schindler, Fred — Cisco Systems

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

Many PSEs are policing power using a sampled data system. Accurate results depend on PD power demand bandwidth permitted. The power bandwidth (BW) is not defined but measured data shows most PDs stay at an approximately constant power value. Because power conservation is becoming more important, PoE plus PDs are more likely to change power values compared to their predecessors. This will may lead to increased data corruption and sampled data errors.

SuggestedRemedy

Place a power frequency restriction on PDs. This information needs to be tied to any PD surge allowance. Significant PD power ripple should be discouraged because this leads to problems with interoperability.

The PD may draw 15 mA/us at a 350 mA average current, this allowance permits ripple currents that could exceed the "power feeding ripple and noise" limits of the PSE. PSE common mode ripple results due to the impedance in series with the PSE supply.

For example, the OCL required for 100 Mb/s data rates is 350 uH. Half this inductances is in series with one-end the PSE supply. This impedance component alone exceeds the ripple allowance.

The PSE output impedance should be analyzed and then the PD power BW should be specified to ensure system interoperability.

Response *Response Status* **U**

REJECT.

no concensus for change

Cl **33** *SC* **33.3.1** *P* **57** *L* **41** # 78

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **R** *4P*

Draft D3.0
The standard allow using for each pair up to Icable.
This Note prevents using all 4 pairs in a way that the total current will be Icable.
The end result if using a total of Icable for all 4 pairs would be less power on the cables, less power consumption on PSE resulting with higher then 80% system efficiency.
If Icable meet the specification of 2P then I<Icable certainly meets the same specification so preventing feeding the current all over the 4 pairs doesnt make sense.

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

SuggestedRemedy

Option 1:
Delete:
"PDs that simultaneously require power from both Mode A and Mode B are specifically not allowed by this standard."
Option 2:
Change to: "PDs that simultaneously recive power from both Mode A and Mode B are out of scope of the standard."
Option 3:
Change to:"PDs that simultaneously recive power from both Mode A and Mode B are specifically required to meet the requirements of this standard for each Mode A and Mode B independently."
Option 4:
"PDs that simultaneously receive power from both Mode A and Mode B and the sources of Mode A and Mode B are comming from different system segments are specifically not allowed by this standard."

Response *Response Status* **U**

REJECT.

OBE 72

This note does not prevent using all 4 pairs in the manner proposed. It merely states that the PD must not REQUIRE on both mode A and mode B. The PD architecture will accept power on all 4P if the PSE decideds to become non-compliant and power on all 4P. Commentary only: Other sections of the standard may preclude these implementations, and interoperability is dubious at best.

Midspan adhoc has been charter with the task of assuring interoperability across 2P/4P mixed systems. The TF awaits this result.

Cl **33** *SC* **33.3.1** *P* **57** *L* **41** # 74

Darshan, Yair — Microsemi Corporation

Comment Type **TR** *Comment Status* **R** *4P*

Draft D3.0:

The note in line 41 precludes the ability to reduce power loss over the cable and increase overall system efficiency.
Rational:
Using a Type 2 PD that requires a total of 24W (example) on a 2P can also take a toatal of 24W over all 4 pairs with simple PD implementation.
In this case this PD can work on 2P PSE or on 2x2P PSEs with the same PD behaviour which is transparent to the user.

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

SuggestedRemedy

Change from:

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

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

Response *Response Status* **U**

REJECT.

OBE 72

Identical comment conceptually to comment #78.
The comment demonstrates a concern over the case where there is a PD that can work as either24W 2 pair or 24W 4 pair (2x 2 pair, total of 24W). The exisitng text does not specifically preclude either solution because the the PD does not REQUIRE power from both pairs, it can work on either pair set (Mode A or B). There is no problem to be fixed. A PD built as suggested would represent a superset of the required functionality.

Cl **33** *SC* **33.3.5.2** *P* **64** *L* **36** # 207

Tziony, Noam — Microsemi

Comment Type **TR** *Comment Status* **R** *class pd*

Table 33-16
Item 3:
Mark event current (IMark) is 0.25mA min
This minimum value is not require. A zero value is OK too.
Rational:
Until PD gets to Vmark_th, the current is 40mA which discharge the port.
When PD detects Vmark_th, current can be zero.
The requirement of 0.25mA limits implementations.

SuggestedRemedy

Change to:
Mark event current (IMark) 0mA min

Response *Response Status* **U**

REJECT.

Limiting PD behavior often eases PSE design and vise versa.

The requirement for the PD to draw 0.25mA minimum reduces design requirements for the PSE. PSEs are typically designed with one-sided drivers that can assert voltage onto the port, but are unable to discharge the port. By mandating a minimum load current, the PSE can be designed without needing to implement a discharge circuit. Additionally, PSE stablity requriements are eased when there is a limited range of load currents.

It can be aruged that the 0.25mA requirement limits PD implementations, however practically speaking, PDs will draw some current in order to maintain state memory. PDs are also required to present an invalid signature which can be implemented by shorting the port with a ~10Kohm resistor thereby meeting both minimum current draw and invalid signature requirments.

Cl **33** *SC* **33.3.5.2** *P* **64** *L* **36** # 210

Tziony, Noam Microsemi

Comment Type **TR** *Comment Status* **A** *class pd*

Table 33-16
Item 3:
Mark event current (IMark) is 2mA max

We allow Imark_lim to be 5mA minimum.
So Imark can be up to <5mA.
It is possible to get PSE voltage down too 7V with Imark up to 5mA.

SuggestedRemedy

Table 33-16 Item 3:
Mark event current (IMark) 4mA maximum

Response *Response Status* **U**

ACCEPT.

Cl **33** *SC* **33.3.5.2.1** *P* **64** *L* **47** # 208

Tziony, Noam Microsemi

Comment Type **TR** *Comment Status* **A** *class pd*

At Table 33-16, item 4 (VMark_th), additional information "See 33.3.5.2.1".

I've looked at subsection 33.3.5.2.1 and I didn't find any explanations regarding VMark_th

SuggestedRemedy

Add the following text to 33.3.5.2.1:
"Vmark_th is the operating range of the Mark event to be detected by the PD.
The mark event voltage as specified in Table 33-16 item 2 is actually the PSE mark event range after worst case cable voltage loss as measured at the PD PI.
Once the PD detects Vmark_th, it may reduce its current from Iclass to Imark.
When PD gets to Mark event voltage range, the PD shall consume Imark"

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Insert text at the end of 33.3.5.2.1:

"Vmark_th is the PI voltage threshold at which the PD implementing 2-event classification transistions into and out of the DO_CLASS_EVENT1 or DO_CLASS_EVENT2 states as shown in Figure 33-17."

Cl **33** *SC* **33.3.5.2.2** *P* **65** *L* **3** # 209

Tziony, Noam Microsemi

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

At Table 33-16, item 5 (VReset_th), additional information "See 33.3.5.2.2".

I've looked at subsection 33.3.5.2.2 and I didn't find any explanations regarding VReset_th

SuggestedRemedy

Add the following text 33.3.5.2.2

"Vreset_th is the operating range of the Reset to be detected by the PD.
Once the PD detects Vreset_th, it will behave as specified in pd-reset Variable definition."

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

Insert the following into 33.3.5.2.1:

"VReset_th is the PI voltage threshold at which the PD implementing 2-event classification transistions from the DO_MARK_EVENTx to the NOT_MDI_POWERED state as shown in Figure 33-17."

Change additional info in T33-16 item 5 to See 33.3.5.2.1

See 251

Cl **33** *SC* **33.4.2** *P* **73** *L* **37** # 398

Piers Dawe Avago Technology

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

802.3 isn't a test standard or a test-equipment standard; we are just defining what we mean by parameters by showing a recipe to measure them. It's up to the test equipment vendor and user to decide what tolerances are needed; 1%, 0.1% or whatever. Test equipment tolerancing evolves gradually over time. A spec with tolerances gets us into a silly game of double bluff: If the result is within 1% is it a pass or a fail? Do I have to cover myself by correcting for the possible uncertainty in my customers 1% equipment? And so on.

SuggestedRemedy

As numbers are precise unless otherwise stated, remove the '+/- 1%' in all the test circuits

Response *Response Status* **U**

REJECT.

The 1% is defining the amount of unbalance in the fixture and is necessary information.

Cl **33** *SC* **33.4.8** *P* **79** *L* **27** # 399

Piers Dawe Avago Technology

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

Does the Midspan PSE in Fig 33-25 power the cord to its left, its right, or both? Does the connection really extend from one end of it to the other?

SuggestedRemedy

Be clearer

Response *Response Status* **U**

REJECT.

This is the interconnect model and is correct if the left side equipment is a hub/switch/router or PD. It is only intended to show the allowed connections and shows that the Midspan is allowed to 'look' like only one connector. The direction of power feeding is irrelevant as this diagram only addresses the impact of the Midspan on the channel.

Cl **33** *SC* **33.6** *P* **84** *L* **1** # 402

Piers Dawe Avago Technology

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

I believe that management register specifications are always in Clause 22 or Clause 45 (see 73.8 for an example).

SuggestedRemedy

Move the bulk of this subclause to Clause 22 or Clause 45 as appropriate

Response *Response Status* **U**

REJECT.

This is inline with what 802.3af (802.3-2005 Clause 33) has and is done elsewhere.

Cl **33** *SC* **33.7** *P* **89** *L* **1** # 492

Ganga, Ilango Intel

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

Missing PICS for 33.7 Data Link layer classification requirements
Also missing PICS for requirements in 33.8

SuggestedRemedy

Add PICS corresponding to 33.7 and 33.8

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE submission from Gerry Nadeau.

PICS being redone for entire draft

Cl **33** *SC* **33.7** *P* **89** *L* **11** # 388

Piers Dawe Avago Technology

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

TLVs? Are these Slow Protocol TLVs?

SuggestedRemedy

If so, would an annex to 57 be the right place to define them (if not 802.1AB)? Anyway, a PMD-and-below clause seems the wrong place.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE 504.

Cl **33** *SC* **33.7** *P* **89** *L* **18** # 386

Piers Dawe Avago Technology

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

Text says 'A device implementing Data Link Layer classification shall send power management Protocol Data Units (PDUs) and process PDUs received from the remote device at least once every 30 seconds.' Per common sense and EEE principles, a PD should be allowed to go to sleep, in which case this isn't appropriate.

SuggestedRemedy

Explain how this can work; does the PD retract its claim to Data Link Layer classification, temporarily? Or should the sentence be qualified with 'If not in low power mode' or similar?

Response *Response Status* **U**

REJECT.

The 802.1AB standard requires periodic probing, the default of which is once every thirty seconds, this is not an 802.3 requirement.

Cl **33** *SC* **33.7** *P* **89** *L* **18** # 387

Piers Dawe — Avago Technology

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

Text says 'The information supplied by the Power Via MDI TLV defined in IEEE Std 802.1ABT Annex G.3 is superseded by the DTE Power via MDI classification TLV.' So there is a 'Power Via MDI' messaging protocol and a 'DTE Power via MDI classification'? If so, their names and functions are too similar, and this draft looks like an attempt to change 802.1AB, outside of 802.1AB, and without deprecating or obsoleting whatever is currently in 802.1AB. Is 'Power Via MDI' used for anything else?

SuggestedRemedy

If this is 802.1AB work, get the things you want into their draft, not here.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE 504.

Cl **33** *SC* **33.7** *P* **89** *L* **8** # 493

Ganga, Ilango — Intel

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

Data link layer classification requirement:

"Type 2 PDs that require more than 12.95 W must support
Data Link Layer classification (see 33.3.5).Data Link Layer classification is optional for all other devices."

Is this "must support" or "shall support"?

SuggestedRemedy

Change this to, "shall", if it is a requirement for Type 2 PDs more than...

Response *Response Status* **U**

REJECT.

The would be a redundant shall. Section 33.3.5 (referenced in the text) contains the shall statement. This is intended to be introductory text for the DLL section.

Cl **33** *SC* **33.7.2.1.1** *P* **90** *L* **21** # 353

sastry, ramesh — Cisco Systems

Comment Type **TR** *Comment Status* **R** *L2 New Feature*

The following changes are proposed to Table 33-22 to support low power modes in the PD to conserve power

SuggestedRemedy

New Text
3 - reserved
2:0 - 2 1 0
1 X X = reserved
1 0 0 = conserve
0 1 1 = low
0 1 0 = high
0 0 1 = critical
0 0 0 = unknown (default)

Response *Response Status* **U**

REJECT.

The requested feature is to allow a sleep mode. However, specifics of the feature were not supplied in the suggested remedy and cannot be crafted at the meeting. The TF took a poll to guage the interest in the new feature. Results below.

straw poll: the group would encourage the commentor to develop complete text for suggested remedy to implement this feature.

Y: 10, N: 0, A: 10

Cl **33** *SC* **33.7.5** *P* **92** *L* **41** # 439

Barrass, Hugh — Cisco

Comment Type **TR** *Comment Status* **A** *L2 Timing*

This whole section seems to be at odds with 33.7.1 - devices shall send and receive every 30 seconds.

Furhermore a much more rapid response is required if this feature is to be used for any form of dynamic power management (e.g. allocating power for a video call during ring).

SuggestedRemedy

Replace the 3 paragraphs with:

An LLDPDU containing a DTE Power via MDI classification TLV shall be sent within 35 seconds of Data Link Layer classification being enabled in a PD as indicated by the variable pd_dll_enabled, or in a PSE as indicated by the variable pse_dll_enabled. See 33.2.4.4, 33.3.3.3, 33.7.6.2.

An LLDPDU containing a DTE Power via MDI classification TLV with the Acknowledge field set to either "acknowledge" or "non-acknowledge" shall be sent within 30 seconds of receipt of a valid LLDPDU containing a DTE
Power via MDI classification TLV with the Requested power value field not equal to the Actual power value field. It is recomended that a PSE that can support dynamic power allocation should respond within 300 milliseconds to such a PDU in normal operation.

An LLDPDU containing a DTE Power via MDI classification TLV with the Acknowledge field set to "not part of acknowledge cycle" shall be sent within 35 seconds of receipt of a valid LLDPDU containing a DTE Power via MDI
classification TLV with the Acknowledge field set to either "acknowledge" or "non-acknowledge."

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE By NH and Denver motions

Cl **33** *SC* **33.7.5** *P* **92** *L* **41** # 344

sastry, ramesh — Cisco Systems

Comment Type **TR** *Comment Status* **A** *L2 Timing*

An LLDPDU containing a DTE Power via MDI classification TLV shall be sent within 5 minutes of Data Link Layer classification being enabled in a PD as indicated by the variable pd_dll_enabled, or in a PSE as
indicated by the variable pse_dll_enabled. See 33.2.4.4, 33.3.3.3, 33.7.6.2.

SuggestedRemedy

An LLDPDU containing a DTE Power via MDI classification TLV shall be sent after Data Link Layer classification being enabled in a PD as indicated by the variable pd_dll_enabled, or in a PSE as indicated by the variable pse_dll_enabled. See 33.2.4.4, 33.3.3.3, 33.7.6.2.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE By NH and Denver motions

Cl **33** *SC* **33.7.5** *P* **92** *L* **54** # 440

Barrass, Hugh — Cisco

Comment Type **TR** *Comment Status* **A** *L2 Timing*

It is necessary that a PD can identify whether it has been connected to a type 2 PSE as rapidly as possible when it is first connected. For example, in some applications, a PD installer may plug the PD into a socket that is far distant from the PSE and will not know whether the port is able to support a high power device until a type 2 PSE is identified. Clearly this is not a problem for L1 classification but it requires a PSE supporting L2 classification to start sending management frames as soon as possible after it has powered the PD.

Clearly this may not be possible in all circumstances - such as during a PSE reboot or if hundreds of PDs are connected simultaneously. The requirement needs to be expressed for "normal operation."

SuggestedRemedy

Add a paragraph at the end of 33.7.5

To allow some PD devices to indicate that they have been connected to a type 2 PSE as rapidly as possible, the PSE shall start sending LLDP management frames including the appropriate power type within 5 seconds of applying power to the PD in normal operation.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE By NH and Denver motions

Cl **33** *SC* **33.7.6.2** *P* **94** *L* **13** # 295

Barrass, Hugh Cisco

Comment Type **TR** *Comment Status* **R** *MGMT: GET-SET*

Comments reference **HB-01** and **HB-02** added new variables for local and remote; actual and requested "PowerFields"

Definitions for these must be added into the variabl edefinitions section.

SuggestedRemedy

Comment reference **HB-03**

Add the following definitions before "removePower"

locActualPowerFields

A concatenation of the fields that indicate the actual PD power type, source, priority and value of the local system. This variable consists of a 24 bit field: bits 23:16 correspond to the Actual power type/source/priority value defined in 33.7.2.3 bit 7 mapping to bit 23, etc.; bits 15:0 correspond to the Actual power value defined in 33.7.2.4. These are mapped to the attributes aLLDPPoEPLocActualPowerType; aLLDPPoEPLocActualPowerSource; aLLDPPoEPLocActualPowerPriority; and aLLDPPoEPLocActualPDPowerValue (30.12.1.1.6,30.12.1.1.7,30.12.1.1.8,30.12.1.1.9).

locRequestedPowerFields

A concatenation of the fields that indicate the requested PD power type, source, priority and value of the local system. This variable consists of a 24 bit field: bits 23:16 correspond to the Requested power type/source/priority value defined in 33.7.2.1 bit 7 mapping to bit 23, etc.; bits 15:0 correspond to the Requested power value defined in 33.7.2.2. These are mapped to the attributes aLLDPPoEPLocRequestedPowerType; aLLDPPoEPLocRequestedPowerSource; aLLDPPoEPLocRequestedPowerPriority; and aLLDPPoEPLocRequestedPDPowerValue (30.12.1.1.2, 30.12.1.1.3, 30.12.1.1.4, 30.12.1.1.5).

remActualPowerFields

A concatenation of the fields that indicate the actual PD power type, source, priority and value of the remote system. This variable consists of a 24 bit field: bits 23:16 correspond to the Actual power type/source/priority value defined in 33.7.2.3 bit 7 mapping to bit 23, etc.; bits 15:0 correspond to the Actual power value defined in 33.7.2.4. These are mapped to the attributes aLLDPPoEPRemActualPowerType; aLLDPPoEPRemActualPowerSource; aLLDPPoEPRemActualPowerPriority; and aLLDPPoEPRemActualPDPowerValue (30.12.2.1.6, 30.12.2.1.7, 30.12.2.1.8, 30.12.2.1.9).

remRequestedPowerFields

A concatenation of the fields that indicate the requested PD power type, source, priority and value of the remote system. This variable consists of a 24 bit field: bits 23:16 correspond to the Requested power type/source/priority value defined in 33.7.2.1 bit 7 mapping to bit 23, etc.; bits 15:0 correspond to the Requested power value defined in 33.7.2.2. These are mapped to the attributes aLLDPPoEPRemRequestedPowerType; aLLDPPoEPRemRequestedPowerSource; aLLDPPoEPRemRequestedPowerPriority; and aLLDPPoEPRemRequestedPDPowerValue (30.12.2.1.2, 30.12.2.1.3, 30.12.2.1.4, 30.12.2.1.5).

Response *Response Status* **U**

REJECT.

See comment 276 (HB-01) which was rejected

Cl **33** *SC* **33.7.6.3** *P* **95** *L* **41** # 345

sastry, ramesh Cisco Systems

Comment Type **TR** *Comment Status* **A** *L2 Collision*

pd_denial_timer
A timer used to limit when a PD can make a new request to change the allocated power after a request is denied. The timer is done when it reaches 1 second.

Change this text to the folloing in the Remedy Section

SuggestedRemedy

pd_denial_timer
A timer is used to limit when a PD can make a new request to change the allocated power after a request is denied or when a collision is detected. The variable timer in the range of 1 - 1.25 sec shall be used.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE by Diab/Thompson Motion passed at 2:51 on 6/27/2008

Cl **33** *SC* **33.7.6.3** *P* **95** *L* **43** # 296

Barrass, Hugh Cisco

Comment Type **TR** *Comment Status* **A** *L2 Collision*

If there is no difference between the pd_denial_timer and the pse_denial_timer then collisions will not resolve.

The PSE should win in any conflict.

SuggestedRemedy

Change the sentence:

"The timer is done when it reaches 1 second"

to:

"The timer is done after a period from 1.0 to 1.25 seconds"

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE by Diab/Thompson Motion passed at 2:51 on 6/27/2008

Cl **33** *SC* **33.7.6.3** *P* **95** *L* **44** # 346

sastry, ramesh Cisco Systems

Comment Type **TR** *Comment Status* **A** *L2 Collision*

pse_denial_timer
A timer used to limit when a PSE can make a new request to change the allocated power after a
request is denied. The timer is done when it reaches 1 second.

Change this text to the folloing in the Remedy Section

SuggestedRemedy

pse_denial_timer
A timer is used to limit when a PSE can make a new request to change the allocated power after a request is denied or when a collision is detected. The variable timer in the range of 0.75 - 1.0 sec shall be used.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE by Diab/Thompson Motion passed at 2:51 on 6/27/2008

Cl **33** *SC* **33.7.6.3** *P* **95** *L* **47** # 297

Barrass, Hugh Cisco

Comment Type **TR** *Comment Status* **A** *L2 Collision*

If there is no difference between the pd_denial_timer and the pse_denial_timer then collisions will not resolve.

The PSE should win in any conflict.

SuggestedRemedy

Change the sentence:

"The timer is done when it reaches 1 second"

to:

"The timer is done after a period from 0.75 to 1.0 seconds"

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE by Diab/Thompson Motion passed at 2:51 on 6/27/2008

Cl **33** *SC* **33.7.6.4** *P* **96** *L* **1** # 298

Barrass, Hugh Cisco

Comment Type **TR** *Comment Status* **R** *MGMT: GET-SET*

With reference to comment **HB-01**

The request is evaluated on the basis of multiple power objects - not just the power value.

SuggestedRemedy

Change

TRUE: The requested change to the allocated power is accepted
FALSE: The requested change to the allocated power is not accepted

to

TRUE: The requested change to the allocated power objects is accepted
FALSE: The requested change to the allocated power objects is not accepted

Response *Response Status* **U**

REJECT.

Refer comment 276 (HB-01) which was rejected, hence its not an object

Cl **33** *SC* **33.7.6.5** *P* **96** *L* **12** # 293

Barrass, Hugh — Cisco

Comment Type **TR** *Comment Status* **R** *MGMT: GET-SET*

Figure 33-27

The state machine needs to support changes in other power objects - not just "PowerValue."

The use of locActualPowerValue, locRequestedPowerValue, remActualPowerValue, and remRequestedPowerValue within the state machine needs to be changed to accommodate other objects.

SuggestedRemedy

Comment reference **HB-01**

Within Figure 33-27:

Change locActualPowerValue to locActualPowerFields (4 instances)
Change locRequestedPowerValue to locRequestedPowerFields (4 instances)
Change remActualPowerValue to remActualPowerFields (2 instances)
Change remRequestedPowerValue to remRequestedPowerFields (3 instances)

See comment reference **HB-03** for changes to add definitins for these variables.

Response *Response Status* **U**

REJECT.

See comment 276 (HB-01) which was rejected

Cl **33** *SC* **33.7.6.5** *P* **96** *L* **27** # 90

Darshan, Yair — Microsemi Corporation

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

Draft D3.0:
The state diagram as it is in figure 33-27 and 33-28 allows the case of a Type 1 PD that requires more power then 12.95 by using Data Link Layer Classification. This case is not allowed (due to iteroperability issues) and according to the state diagram it is.

SuggestedRemedy

Add to the state diagram a state that if the PD is classified as class 0,1,2 and 3 it can reclassify itself to lower class power then advertized by the hardware classification but not to higher class power.

Response *Response Status* **U**

REJECT.

By definition a Type 1 cannot exceed the power levels defined in 802.3-2005.

Cl **33** *SC* **33.7.6.5** *P* **96** *L* **33** # 350

sastry, ramesh — Cisco Systems

Comment Type **TR** *Comment Status* **A** *STATE MACHINE*

Add the following to detect the collsion
in the Local Request state (line 30) in the NACK branch

SuggestedRemedy

locAcknowledge = NACK
(remRequestedPowerValue NOT= remActualPowerValue)

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE by Diab/Thompson Motion passed at 2:51 on 6/27/2008

Cl **33** *SC* **33.7.6.5** *P* **96** *L* **33** # 291

Barrass, Hugh — Cisco

Comment Type **TR** *Comment Status* **A** *STATE MACHINE*

Figure 33-27

State machine is missing "collision" condition.

If the local system sends a request just before it receives a remote request - treat it the same as getting a "NACK"

SuggestedRemedy

Change "locAcknowledge = NACK"

to "(locAcknowledge = NACK) + (remRequestedPowerValue != remActualPowerValue)"

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE by Diab/Thompson Motion passed at 2:51 on 6/27/2008

Cl **33** *SC* **33.7.6.5** *P* **97** *L* **12** # 294

Barrass, Hugh Cisco

Comment Type **TR** *Comment Status* **R** *MGMT: GET-SET*

Figure 33-28

The state machine needs to support changes in other power objects - not just "PowerValue."

The use of locActualPowerValue, locRequestedPowerValue, remActualPowerValue, and remRequestedPowerValue within the state machine needs to be changed to accommodate other objects.

SuggestedRemedy

Comment reference **HB-02**

Within Figure 33-28:

Change locActualPowerValue to locActualPowerFields (4 instances)
Change locRequestedPowerValue to locRequestedPowerFields (4 instances)
Change remActualPowerValue to remActualPowerFields (2 instances)
Change remRequestedPowerValue to remRequestedPowerFields (3 instances)

See comment reference **HB-03** for changes to add definitins for these variables.

Response *Response Status* **U**

REJECT.

See comment 276 (HB-01) which was rejected

Cl **33** *SC* **33.7.6.5** *P* **97** *L* **33** # 292

Barrass, Hugh Cisco

Comment Type **TR** *Comment Status* **A** *STATE MACHINE*

Figure 33-28

State machine is missing "collision" condition.

If the local system sends a request just before it receives a remote request - treat it the same as getting a "NACK"

SuggestedRemedy

Change "locAcknowledge = NACK"

to "(locAcknowledge = NACK) + (remRequestedPowerValue != remActualPowerValue)"

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE by Diab/Thompson Motion passed at 2:51 on 6/27/2008

Cl **33** *SC* **33.8** *P* **100** *L* **1** # 347

sastry, ramesh Cisco Systems

Comment Type **TR** *Comment Status* **A** *Loss of Communication*

Replace the entire text in 33.8 (lines 1-25) Loss of management frame communication with the following text

SuggestedRemedy

33.8 Loss of management frame communication

The following scenarios may cause loss of communication and the expected system behavior under these circumstances are prsented

1)After the PSE has identified the PD as a Type 2 PD via Physical Layer classification, PSE shall not change the applied power to the PD till it receives the 1st TLV requesting for different power value via Data Link Layer communication.

After Data Link Layer communication has been established there are three scenarios that may cause a loss of management frame communication.

2) Upon loss of management frame communication, after a successful Layer 2 classification operation , both PSE and PD shall remain operational using the last acknowledged Data Link Layer classification. If a loss of management frame communication, after successful Layer 2 classification operation, persists for more than the smaller value of the remote TTL value (see IEEE Std 802.1AB-200X, subclause 9.5.4) for the PSE/PD or 5 minutes, shall assert the aLLDPPoEPLocAcknowledge (30.12.1.1.10) attribute in the DTE Power via MDI classification local object class to the enumeration "loss of communications." This will allow systems for any potential fault recovery.

3) If a loss of management frame communication, after successful Layer 2 classification operation, persists for more than the smaller of (2 × remote TTL) or 5 minutes, a PSE may optionally power cycle the PD. If the loss of communication persists even after one power cycle, the PSE may optionally remove the the power to the PD. The PSE may remove power at any time per Figure 33-9.

4)PD may send a request to the PSE with the intention to enter the power conservation mode, in which, the LLDP state machine in the PD may be non operational. It does this by sending the TLV with power priority field changed to "conserve" value as mentioned in the Table 33-22 . The PSE will respond with ACK with the minimum power value to be drawn by the PD in the requested value filed in the TLV. The PD will respond with requested power and the actual power values equal and enter the conserve mode. From then on PSE shall not treat this as loss of communication event . The PD can subsequently send an another TLV with power priority reverted back to its original value and the PSE can implement the time out behavior as described in this section.

PSE will always remove power to the PD when the PD draws current below the IPort_MPS min value as specified in Table-33-18.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE 153

Cl **33** *SC* **33.8** *P* **100** *L* **12** # 299

Barrass, Hugh Cisco

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

"If Data Link Layer classification fails to come up within 5 minutes after the PSE has turned on power to the PD and the PSE identified the PD as a Type 2 PD via Physical Layer classification, the PSE may remove power."

In practical terms, 5 minutes might as well be infinity. This will significantly complicate the PSE validation process.

I'm trying to see the philosophy behind this behavior. It seems that the PSE is enforcing the PD requirement to support data link layer classification if it wants higher power. Bear in mind that the standard already states that the PSE will provide (and allocate) power according to the L1 classification until the DLL classification amends that. Therefore there's no issue with protecting the PSE (as there is in the general policing function). I think it is foolhardy to try and design the PSE behavior to get deterministic response to non-compliant PDs - if any system is non-compliant then you can expect indeterminate behavior. The set of non-compliant and faulty behavior is infinite.

SuggestedRemedy

Delete the entire sentence:

"If Data Link Layer classification fails to come up within 5 minutes after the PSE has turned on power to the PD and the PSE identified the PD as a Type 2 PD via Physical Layer classification, the PSE may remove power."

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE By NH and Denver motions

The objectives require mutual identification. To address the balloter's concern, change to the following in line with his other comments:

"If Data Link Layer classification fails to come up within 1.25 seconds after the PSE has turned on power to the PD and the PSE identified the PD as a Type 2 PD via Physical Layer classification, the PSE may remove power."

Cl **33** *SC* **33.8** *P* **100** *L* **17** # 436

Barrass, Hugh — Cisco

Comment Type **TR** *Comment Status* **A** *Loss of Communication*

The loss of communication object should be asserted when loss of communication occurs. This has been defined in comment reference **HB-04**

The optional power removal is then defined by a further time following this.

Also, the latter half of the paragraph doesn't make sense:

"If ... for the remote system, a PSE may remove power, a PD shall aLLDPPoEPLocAcknowledge (30.12.1.1.10) attribute in the DTE Power via MDI classification local object class to the enumeration "loss of communications."

SuggestedRemedy

Change:

Upon loss of management frame communication, PSEs and PDs shall remain operational using the last acknowledged classification state.

If a loss of management frame communication persists past the LLDP time to live (TTL) timeout value for the remote system (see IEEE Std 802.1AB-200X, subclause 9.5.4) plus an additional delay of 2 × TTL timeout value for the remote system, a PSE may remove power, a PD shall aLLDPPoEPLocAcknowledge (30.12.1.1.10) attribute in the DTE Power via MDI classification local object class to the enumeration "loss of communications."

To

Upon loss of management frame communication, PSEs and PDs shall remain operational using the last acknowledged classification state and the PSE shall set the aLLDPPoEPLocAcknowledge (30.12.1.1.10) attribute in the DTE Power via MDI classification local object class to the enumeration "loss of communications"

If a loss of management frame communication persists for an additional delay of 2 × TTL timeout value for the remote system after the LOSS OF COMMUNICATIONS state has been entered then the PSE may remove power from the PD.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE 153

Cl **33** *SC* **33.8** *P* **100** *L* **19** # 129

Frazier, Howard — Broadcom

Comment Type **TR** *Comment Status* **A** *Loss of Communication*

A delay of "LLDP time to live (TTL) timeout value for the remote system (see IEEE Std 802.1AB-200X, subclause 9.5.4) plus an additional delay of 2 × TTL timeout value for the remote system" would appear to be equal to 3 x TTL timeout value for the remote system, so why not say so?

SuggestedRemedy

Change the sentence to read:
"If a loss of management frame communication persists past three times the LLDP time to live (TTL) timeout value for the remote system (see IEEE Std 802.1AB-200X, subclause 9.5.4) a PSE may remove power,..."

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE 153

Cl **33** *SC* **33.8** *P* **100** *L* **21** # 435

Barrass, Hugh — Cisco

Comment Type **TR** *Comment Status* **A** *Loss of Communication*

The latter half of this paragraph doesn't make sense:

"If ... for the remote system, a PSE may remove power, a PD shall aLLDPPoEPLocAcknowledge (30.12.1.1.10) attribute in the DTE Power via MDI classification local object class to the enumeration "loss of communications."

SuggestedRemedy

Change

a PSE may remove power, a PD shall aLLDPPoEPLocAcknowledge (30.12.1.1.10) attribute in the DTE Power via MDI classification local object class to the enumeration "loss of communications."

To

then the PSE shall set the aLLDPPoEPLocAcknowledge (30.12.1.1.10) attribute in the DTE Power via MDI classification local object class to the enumeration "loss of communications" and may remove power from the PD.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE 153

Cl **33** *SC* **33.8** *P* **100** *L* **21** # 130

Frazier, Howard — Broadcom

Comment Type **TR** *Comment Status* **A** *Loss of Communication*

The statement "a PSE may remove power" contradicts the requirement stated in the preceeding paragraph, which says "Upon loss of management frame communication, PSEs and PDs shall remain operational using the last acknowledged classification state."

Removing power because a low-level management protocol isn't operating as quickly as expected is a drastic step.

SuggestedRemedy

Remove the statement "a PSE may remove power".

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE 153

A clarification can be added. The intent of both statements were that upon loss of communication the device stays in the last classified state. A window is provided underwhich the communication can be restored prior to switching power off.

Cl **33** *SC* **33.8** *P* **100** *L* **21** # 123

Frazier, Howard — Broadcom

Comment Type **ER** *Comment Status* **A** *Loss of Communication*

missing words

SuggestedRemedy

The end of the sentence should read:

"...a PD shall [set the] aLLDPPoEPLocAcknowledge (30.12.1.1.10) attribute in the DTE Power via MDI classification local object class to the enumeration "loss of communications."

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE 153

Cl **33** *SC* **33.8** *P* **100** *L* **26** # 354

sastry, ramesh — Cisco Systems

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

Add the following text about the Power removal due to MPS violation to add context.

SuggestedRemedy

PSE will always remove power to the PD when the PD draws current below the IPort_MPS min value as specified in Table-33-18.

Response *Response Status* **U**

REJECT.

This already covered in the disconnect section 33.2.11.1

Cl **33** *SC* **33.9.2.3** *P* **102** *L* **7** # 437

Barrass, Hugh — Cisco

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

33.3.5 "Type 2 PDs shall implement both 2-Event class signature (see 33.3.5.2) and Data Link Layer classification (see 33.7)."

The PICS does not capture the mandatory requirements for a type 2 PD.

SuggestedRemedy

Change table to:

PDT2*	Type 2 PD	33.3.5	PD is type 2	O	Y/N
PDCL*	PD Classification	33.3.4	PD supports classification PDT2/M	O	Y/N

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE, we have accepted Gerry Nadeau's PICS submission.

Cl **33** *SC* **33.9.3.2** *P* **104** *L* **4** # 491

Ganga, Ilango Intel

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

Incorrect subclause reference for PSE17 through 57.
Also missing hyperlinks for subclause references for the following:

PD1-33
EL1-18
PSEEL1-14

And all the subsequence PICS till the end of Clause 33

SuggestedRemedy

Fix the subclause references and/or hyperlinks for all the PICS in Clause 33 starting PSE17

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE, we have accepted Gerry Nadeau's PICS submission.

Cl **33** *SC* **33.9.3.9** *P* **112** *L* **31** # 438

Barrass, Hugh Cisco

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

There are no PICS items for any of the data link layer functions.

SuggestedRemedy

Task the editor to add the PICS items.

Response *Response Status* **U**

ACCEPT IN PRINCIPLE.

OBE, we have accepted Gerry Nadeau's PICS submission.