Cl **01**   *SC* **4**   *P*   **2** *L*   **9** # **46**
Thompson, Geoff   Nortel

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

"1.4.170 Medium Dependent Interface (MDI): The mechanical and electrical interface between the trans-mission medium and the Medium Attachment Unit (MAU) (10BASE-T) or PHY (100BASE-T, 1000BASE-X, or 1000BASE-T)...."
is technically incorrect.

The MDI is not an electrical only interface across 802.3. The term "MDI" also applies to optical interfaces.

SuggestedRemedy

Either:
Enter changes for the entire 802.3 document so that all fiber instances of the MDI are changed to "FOMDI" (See 9.9)

Or generalize the current incorrect definition (see earlier 802.3 editions?) and then rework the proposed change to be correct in the more general context.

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

Add new definition:
1.4.x Twisted Pair Medium Dependent Interface (TP MDI): The mechanical and electrical interface between the transmission medium and the Medium Attachment Unit (MAU) e.g., (10BASE-T) or PHY (100BASE-TX or 1000BASE-T)...."

Appropriate modifications to 1.4.170 will be crafted by maintenance task force for inclusion in the next draft.

Cl **30**   *SC* **Figure 30-3**   *P*   **10** *L*   **36** # **215**
Law, David   3Com

Comment Type   **T**   *Comment Status*   **A**   *PA*
Add text 'Present if MII' is missing form the oMAU oResourceTypeID entities.

SuggestedRemedy

Add text 'Present if MII' in a dashed outline box in the two lowest oResourceTypeID boxes as Figure 30-3 of IEEE Std 802.3-2002 has.

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

Cl **30**   *SC* **30.2.5**   *P*   **11** *L*   **46** # **216**
Law, David   3Com

Comment Type   **T**   *Comment Status*   **A**   *PA*
The text that reads 'All attributes and actions are notifications' doesn't make sense and isn't true.

SuggestedRemedy

Replace the entire paragraph with the text

'For managed Midspans, the Basic Package is mandatory; all other packages are optional. For a managed Midspan to be conformant to this standard, it shall fully implement the Basic Package. For a Midspan to be conformant to an optional package it shall implement that entire package.'

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

Cl **30**   *SC* **30.9.1.1.6**   *P*   **14** *L*   **33** # **219**
Law, David   3Com

Comment Type   **T**   *Comment Status*   **A**   *State Machine*
This attribute is getting cumbersome with its reference to all the different PSE Detection State Diagram states.

SuggestedRemedy

Suggest a new variable be defined for the PSE state machine called mr_PSE_detection_status (or PSE_detection_status) and that the value of this variable is set to the various values we want to report in both the Detection Status bits specified in 33.6.1.2.5 and in the aPSEDetectionStatus attribute.

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

David Law et al needs to provide the mapping.

Cl **33**   *SC* **2**   *P*   **37** *L*   **38** # **56**
Thompson, Geoff   Nortel

Comment Type   **T**   *Comment Status*   **A**   *PA*
The text: "...and remove power from the link segment when a PD is disconnected." is not technically correct

SuggestedRemedy

Change to: "...and remove power from the link segment when a PD is disconnected or no longer requests power"

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

Cl **33**   *SC* **33.2.3.1**   *P*   **39**   *L*   **17**   *#* **203**

Law, David   3Com

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

Change the state diagram variable definitions for variables that are supplied by the MII register bits to be similar to equivalents bits in Clause 28 Auto-Negotiation (see 1st paragraph of 28.3).

This means that a variable that is supplied by a MII register uses the notation 'mr_x' and a table is supplied prior to the state diagram mapping the variables to the appropriate register bits.

SuggestedRemedy

In figures 33-5 and 33-6 change the following variables as shown:-

pse_alternative -> mr_pse_alternative
pse_force_power -> mr_pse_force_power
pse_enable -> mr_pse_enable
overcurrent -> mr_overcurrent
mps_valid -> mr_mps_valid
pd_class_detected -> mr_class_detected
power_applied -> mr_power_applied

In figure 33-13 change the following variables as shown:-

2. In subclause 33.2.1 'Conventions' add the text 'Variables using the "mr_x" notation do not have state diagram defaults; however, their appropriate initialization conditions when mapped to the MII interface are covered in 33.6.1.

3. Add a new subclause 33.6.1.3 'State diagram variable to MII register mapping that reads as follows:-

The state diagram of Figure 33-5 generates and accepts variables of the form 'mr_x', where x is an individual signal name. These variables comprise a management interface that may be connected to the MII management function or other equivalent function. Table 33-? describes how the MII registers map to the management function interface signals.

Table 33-? State diagram variable to MII regsiter mapping
```
+--------------------+---------------------------+
| mr_pse_alternative | 11.3:2 pair_control       |
+--------------------+---------------------------+
| mr_pse_force_power | 11.1 PSE Pwr Force On Test |
+--------------------+---------------------------+
| mr_pse_enable      | 11.0 PSE Enable           |
+--------------------+---------------------------+
| mr_overcurrent     | 12.9 Overcurrent          |
+--------------------+---------------------------+
| mr_mps_valid       | 12.8 MPS Absent           |
+--------------------+---------------------------+
```

```
| mr_pd_class_detected | 12.7:5 PD Class         |
+--------------------+---------------------------+
| mr_power_applied   | 12.0 Power Pair Status    |
+--------------------+---------------------------+
```

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

Cl **33**   *SC* **33.2.3.1**   *P*   **39**   *L*   **27**   *#* **211**

Law, David   3Com

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

There is no description of the convention used for the Timers defined in subclause 33.2.3.3. While subclause 21.5 is referenced here that subclause does not cover the conventions.

In addition the convention elsewhere in the standard for adding the option to halt a counter is to call it a stop command rather than a disable command as is used here - see 32.2.4 and 40.4.5.2.

SuggestedRemedy

In subclause 33.2.3.1 add the text

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

2. Replace all instances of disable x_timer be changed to stop x_timer.
3. Remove the text related to the disable command from 33.2.3.3.

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

Cl **33**   *SC* **33.2.3.2**   *P*   **39**   *L*   **31**   *#* **208**

Law, David   3Com

Comment Type   **T**   *Comment Status*   **A**   *State Machine*

The behavior of the PSE when the Detection Test Control (11.4) bit is set is not described in the state machine. There is also a reference to this state in the aPSEPowerDetectionStatus attribute.

SuggestedRemedy

Assuming that there is the desire to keep this test mode add a variable mr_detection_test (or detection_control if pervious comment about changing management register related bits is not accepted). When this bit is set the state diagram should not be able to progress beyond the CLASSIFICATION state to the POWER_UP state and a new state is probably required where the state diagram will remain until it returns to IDLE for what ever reason.

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

Cl **33**   *SC* **2.3.2**   *P*   **40** *L*   **14** # **62**
Thompson, Geoff   Nortel

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

RE: "pse_available_power
The number of watts that could be sourced to the PD. This variable supports multiple PSEs operat-ing from a single power supply."

...has no variable or defined values for the variable. Is it an integer? Is it a floating point number of unbounded value? Is it an encoded set of values?

SuggestedRemedy

Add:
Values: 0: Can support Class_0
            1: Can support Class_1
            2: Can support Class_2
            3: Can support Class_0
            4: Reserved

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

This variable should be an enumerated type.

0: Class 1
1: Class 2
2: Class0, 3, and 4

change page 42 line 34 from :"PD_requested_power < PSE_available_power" to "PD_requested_power <= PSE_available_power"

Cl **33**   *SC* **33.2.3.2**   *P*   **40** *L*   **20** # **207**
Law, David   3Com

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

There is no text describing the behavior of a PSE with a PHY that supports the low power mode bit in the MII control register (bit 0.11). It is not clear if the PSE function should or should not be disabled if the associated PHY function is disabled through the use of the PHY low power mode register bit.

SuggestedRemedy

If the PSE function is to be disabled when the low power mode bit is set change the power on reset text from

'Condition that is true until such time as the power supply for the device that contains the PSE overall state diagrams has reached the operating region.'

to read

'Condition that is true until such time as the power supply for the device that contains the PSE overall state diagrams has reached the operating region or the device has low power mode set via MII control register bit 0.11.'

Additional text may be needed elsewhere to cover this.

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

There is no technical error or issue, however we will examine if there is an appropriate place to add a note to the reader that the PHY power down bit has no effect on the PSE or PD operation.

Cl **33**   *SC* **Figure 33-5**   *P*   **42** *L*   **1** # **201**
Law, David   3Com

Comment Type   **T**   *Comment Status* **A**   *State Machine*
The variables pse_power_force does not appear in the definitions.

SuggestedRemedy
Add pse_power_force to the variable definitions.

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

Cl **33**   *SC* **Figure 33-5**   *P*   **42**   *L*   **1**   **#** **200**
Law, David   3Com

Comment Type   **T**   *Comment Status* **A**   *State Machine*

The variables pse_reset, mps_valid and power_applied cannot be set in the IDLE state of the PSE state diagram as they are set by other functions.

In particular forcing the variable power_applied to false within the IDLE state seems unwise and power_appliedwould seem to be a wise variable to condition the exit from IDLE on. If the PSE is reset and forced into IDLE while in the POWER_ON state it shouldn't really exit the IDLE state and start the detection process until the local power supply has powered down as indicated by power_applied = false.

SuggestedRemedy

Remove the setting of the pse_reset, mps_valid and power_applied variables in the IDLE state. Add the exit condition power_applied = false to the exit of the IDLE state.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Cl **33**   *SC* **Figure 33-5**   *P*   **42**   *L*   **1**   **#** **202**
Law, David   3Com

Comment Type   **T**   *Comment Status* **A**   *State Machine*

The variable PSE_available power has inconsistent case, in the figure it is PSE_available, in the variables definition it is pse_available. The same is true for PD_requested_power. In addition the overload timer is defined as tovld_timer and 33.2.3.3 be used as tolvd_timer in the figures.

SuggestedRemedy

Choose one alternative and then use consistently.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Make all variables all lower case.

Cl **33**   *SC* **33.2.3.5**   *P*   **42**   *L*   **3**   **#** **93**
Dwelley, Dave   Linear Technology

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

several state equations appear to have parentheses in the wrong places or are missing them where needed - is the order of precedence of a "=" greater than "*" or "+" in the IEEE state machine standard? Regardless, equations are confusing as written.

for example, pse_reset = true + error_condition * pse_force_power = false would be more clear as:
(pse_reset = true) + error_condition * (pse_force_power = false)

SuggestedRemedy

clarify equations

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Have adhoc mark up equations for editor.

Dave Dwelley in conference with David Law will provide markup text for the editor.

Cl **33**   *SC* **33.2.3.5**   *P*   **42**   *L*   **4**   **#** **204**
Law, David   3Com

Comment Type   **T**   *Comment Status* **A**   *State Machine*

Suggest that the power on function should be separated from the reset variable. There may be a reset without a power cycle.

SuggestedRemedy

1. Add a new variable power_on:

power_on
Condition that is true until such time as the power supply for the device that contains the PSE overall state diagrams has reached the operating region.
Values: false; the device is completely powered (default).
     true; the device has not been completely powered.

2. Change the pse_reset description to read:
pse_reset
Controls the resetting of the Auto-Negotiation state diagrams.
Values: false; do not reset the Auto-Negotiation state diagrams.
     true; reset the Auto-Negotiation state diagrams.

3. Replace current instances of pse_reset with pse_reset + power_on

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace Auto-Negotiation with PSE state machine

Cl **33**   *SC* **33.2.3.5**   *P*   **42**   *L*   **7**   *#* 16

McCormack, Michael   3Com

Comment Type   **TR**   *Comment Status* **A**   *State Machine*

pse_reset, mps_valid and power_applied are signals which are inputs to the state machine and as such can not be assigned by the state machine.

SuggestedRemedy

Remove assignment, other changes may also be necessary but I at least want one comment in about the state machine to work from.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Remove three assignments.

Cl **33**   *SC* **Figure 33-5**   *P*   **42**   *L*   **17**   *#* 212

Law, David   3Com

Comment Type   **T**   *Comment Status* **A**   *State Machine*

It is not clear if the setting of pd_class_detected to 0 (note that this should actually be CLASS_0) in the state DETECTION will be preserved when the value of pd_class_detected returned by the do_classification function in the CLASSIFICATION state in the case of a PD that does not support PD Classification.

SuggestedRemedy

1. Make a clear statement in the do_classification function definition (subclause 33.2.3.4) that the function will return the value of CLASS_0 in the variable pd_class_detected when the PD being classified does not support PD Classification.

2. Either remove the setting of pd_class_detected to 0 in the state DETECTION since the above change should make it redundant OR change the text to read pd_class_detected <= CLASS_0 as the variable pd_class_detected does not have the value 0 defined for it (see 33.2.3.2).

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Perform item 1 and change the text to read pd_class_detected <= CLASS_0 as the variable pd_class_detected does not have the value 0 defined for it (see 33.2.3.2).

Cl **33**   *SC* **33.2.3.5**   *P*   **42**   *L*   **19**   *#* 17

McCormack, Michael   3Com

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

Some PSEs may not check that they have sufficient power nor be able to power a default class 0 device. Specifically, the single port PSEs for "wall wart" replacement for most wireless access point and phones will be tailored by suppliers to the unit with which they are shipped and will likely be below 15 watts and designed just to support the loads of their co-shipped PD. To not allow these products to be compliant is unnecessary and may bring the specification to be irrelevant in some applications, which will result in no standard being in use.

SuggestedRemedy

Remove the comparison "pd_requested_power > pse_availible_power" and its inverse test through out the state machine.

Proposed Response   *Response Status* **C**

REJECT.

Vote to Reject comment:

.3 voters
Y 13   N 3   A 1

Cl **33**   *SC* **Figure 33-6**   *P*   **43**   *L*   **7**   *#* 210

Law, David   3Com

Comment Type   **T**   *Comment Status* **A**   *State Machine*

A variable need to be added that communicates the state of the Overload and Short state diagrams to the main PSE state diagram error_condition variable or at a minimum a variable should be added to communicate the Overload state to the management register if my other comment about adding a mapping between the management register and state diagrams is accepted.

SuggestedRemedy

Add a new variable mr_overcurrent (or overcurrent if pervious comment about changing management register related bits is not accepted). Set this bit false in states IDLE_OVLD and MONITOR_OVLD and true in state DETECT_OVLD.

If pervious comment about changing management register related bits is accepted add mapping entry for mr_overcurrent to 'State diagram variable to MII register mapping' as follows:

```
+--------------------+--------------------------+
| mr_overcurrent     | 12.9 Overcurrent         |
+--------------------+--------------------------+
```

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

The overcurrent bit will be set when either the tovld_timer_done or tlim_timer_done variables become true.

Cl **33**   *SC* **2.4**   *P* **43** *L* **27** **#** **63**
Thompson, Geoff   Nortel

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

The text: "The PSE shall not apply operating power to the PI until it has successfully detected a PD requesting power as described in this section."
is at odds with the capability provided by:

"33.6.1.1.4 PSE Pwr Force On - Test (11.1)
When bit 11.0 is '1', bit 11.1 is ignored. When bit 11.0 is '0', then when bit 11.1 is set to a logic one, it enables a test mode which supplies power without regard to detection. When set to a logic zero, normal operation is selected and detection mode controls the sourcing of power."

SuggestedRemedy

Change to: "In an operational mode, the PSE shall not apply operating power to the PI until it has successfully detected a PD requesting power as described in this section."

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

Cl **33**   *SC* **2.5**   *P* **44** *L* **10** **#** **184**
Schindler, Fred   Cisco

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

Figures 33-7, 33-8 and the text on line 48 all incorrectly indicate that the voltage range with a valid PD connected is 2.8 - 10V. The value of Zsource was changed to >45k. This results in the following maximum voltage with a valid PD attached: 30*26.5/(26.5+45) = 11.1V. If 33K is considered the upper limit of a valid PD then this voltage will be 12.7v.

Also see related comments for p59 and effected section on p79.

SuggestedRemedy

Change the valid voltage range to reflect the new values used for Zsource.

Proposed Response   *Response Status* **Z**

The ranges do not present a problem for a valid PD signature.

Cl **33**   *SC* **33.2.5**   *P* **44** *L* **41** **#** **96**
Dwelley, Dave   Linear Technology

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

several numerical values are called out in the text - should be in tables

also line 48

SuggestedRemedy

Values should be added to table 33-5 or, preferably, moved to a new table titled "PSE detection (and maybe classification too) port electrical requirements". This keeps 33-5 focused on power (and keeps it from growing too large).

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

Need more specifics. Possible ad hoc to mark up document and propose tables.

Dave Dwelley to provide instructions to the editor.

Cl **33**   *SC* **2.5**   *P* **44** *L* **42** **#** **158**
Karam, Roger   CISCO

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

we refer to Vport here.
and we never show where vport is? of course we know what it is
but should we define vport better. may be an RJ45 drawing of some sort
for the clueless...

SuggestedRemedy

define vport so a non-comittee member can tell what it is,
if we look at the signature network say we can see vdetect+/-...

Proposed Response   *Response Status* **C**
REJECT.

Vport is defined in 33.2.1 Table 33-1. The intent of the comment is not clear to the committee.

Cl **33**   *SC* **2.6**   *P*   **45**   *L*   **5**   # **195**
Schindler, Fred   Cisco

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

In order to be flexible with how the PD is detected, the draft standard permits wide allowances for certain parameters: at least one volt between measurements (p44, line 49) and detection timing to be completed within 500mS (p51, line 6).

As a result, an invalid PD can be detected with a compliant PSE.

SuggestedRemedy

An adhoc team should be formed to decide whether this concern is real, and decide whether the the draft should be more restrictive or that current limiting within the PSE can be relied upon to limit damage to a falsely detected PD.

A presentation will be made available during the interim meeting to explain this concern.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add item to Table 33-1.5 (which is a new Table provided by Dave Dwelley per comment #96) that reads minimum settling time item, parameter: Tsettle, min: 16ms.

And add following note:
Note: After changing probing current or voltage, the PSE must wait for at least Tsettle before measuring the port.

New Changes 10/11/2002
16ms is the wrong value and should be 61ms. Actually it should be an equation. Change the value to 61ms and place an editors note within a big thick border box that states 'The parameter Tsettle has a minimum value of 61ms which the editor believes is the correct value. This value however does not correspond to the value 16ms contained in the records of the comment resolution, which is believed to be a digit reversal error'.

Cl **33**   *SC* **2.6.2**   *P*   **45**   *L*   **23**   # **159**
Karam, Roger   CISCO

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

missing a note that within the 15k-19k signature band and the 26.5k-33k area the PSE may or may not power that PD.

SuggestedRemedy

add the note

Proposed Response   *Response Status* **C**

ACCEPT.

Add following

Note: 15K is absolute minimum, but one may reject below 19K. 33K is absolute max but one may reject above 26.5K

Cl **33**   *SC* **33.2.7**   *P*   **46**   *L*   **3**   # **98**
Dwelley, Dave   Linear Technology

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

An invalid PD could well oscillate

SuggestedRemedy

change to:

"...when connected to a valid PD."

Proposed Response   *Response Status* **Z**

See #186

Cl **33**   *SC* **2.7.2**   *P*   **47**   *L*   **35**   # **160**
Karam, Roger   CISCO   *PR*

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

I feel that the classification timing should be mentioned here. it is a critical part of the classification and it is hidden in a note in no man's land. at least state that one must reference the table for it...

SuggestedRemedy

point out the classification timing in the table...

Proposed Response   *Response Status* **C**

REJECT.

This is in the next section 33.2.8

Cl **33**   *SC* **33.2.7.3**   *P*   **47**   *L*   **43**   # **100**
Dwelley, Dave   Linear Technology

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

"Not power the PD" restriction is tighter in 33.2.7.3 than it is in 33.2.7.2 - the two sections should agree.

Also, this forces a PSE that does classification to operate differently than a PSE that opts not to implement classification.

SuggestedRemedy

Add the option to power the PD as a class 0.

Proposed Response   *Response Status* **C**

ACCEPT.

On line 42 and 43 change: the PSE shall not power the PD.
To:
the PSE shall not power the PD or shall power the PD as Class 0.

Cl **33**   *SC* **33.2.8**   *P*   **49** *L*   **8** # **101**
Dwelley, Dave   Linear Technology

Comment Type **T**   *Comment Status* **A**
"must" should be "shall".

SuggestedRemedy
change sentence to read:

"...it shall initiate and successfully complete a new detection cycle before applying power."

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

Cl **33**   *SC* **33.2.8.1**   *P*   **49** *L*   **19** # **102**
Dwelley, Dave   Linear Technology

Comment Type **T**   *Comment Status* **A**   PA
apply 2.8V to what?

SuggestedRemedy
"...greater than 2.8V to the PI."

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

Cl **33**   *SC* **33.2.8.1**   *P*   **49** *L*   **20** # **103**
Dwelley, Dave   Linear Technology

Comment Type **T**   *Comment Status* **A**   PA
"exit from backoff mode" is unspecific

SuggestedRemedy
change to "resume detection"

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

Alternative B detection shall resume detection mode after ..

Cl **33**   *SC* **33.2.8.1**   *P*   **49** *L*   **23** # **104**
Dwelley, Dave   Linear Technology

Comment Type **T**   *Comment Status* **A**   PA
we're actually defining an open circuit here

SuggestedRemedy
add "...(defined as a resistance greater..."

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

Cl **33**   *SC* **2.9**   *P*   **49** *L*   **40** # **190**
Schindler, Fred   Cisco

Comment Type **TR**   *Comment Status* **R**
The standard will benefit from an allowance for a brief voltage droops below the output voltage minimum currently specified at 44V. This allowance would permit an external power source to detect a PSE power supply failure and then take over as the main power source for the PSE. This allowance is similar in nature to the current drawn specification in that it provides a maximum change over a period of time.

SuggestedRemedy
Permit a minimum voltage of 39V.
The maximum time the PSE voltage can remain below 44V is 14mS.
The actual voltage droop profile must fit into a triangular shape with the base defined as 14mS with a height of 5V. This triangular shape's base is at 44V with its peak at 39V. This change also effects table 33-13 line 14 -- the PD's minimum input voltage. This value would reduce to 31V from 36V with the same time profile as the PSE allowance.

Proposed Response   *Response Status* **C**
REJECT.

This is a new requirement that has been introduced late in the game. This response is out of scope from the Draft 3.2 recirculation.

TYPE: TR/technical required T/technical E/editorial   COMMENT STATUS: D/dispatched A/accepted R/rejected   SORT ORDER: Clause, Page, Line, Subclause
RESPONSE STATUS: O/open   W/written C/closed   U/unsatisfied Z/withdrawn

Page 8 of 26
Cl **33**   *SC* **2.9**

Cl **33**   *SC* **Table 33-5**   *P*   **49** *L*   **44** # **15**

DiMinico, Chris   CDT

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

I have a couple of issues with the PSE output impedance parameter.

1. The Power supply output impedance should be specified as an AC impedance.

2. In the test setup described in Annex 33D.1 (PSE design guidelines)
it's not really clear how Z_ser is extracted from Z_port in order
to derive Zo_pos.

SuggestedRemedy

I'm in the process of reviewing the presentations related to the development
of the requirement. I'll will generate a remedy proposal for next weeks ballot review.

Proposed Response   *Response Status* **C**

ACCEPT.

Step 1:
Table 33-5 item 2b - remove from the table
Step 2:
Note for Item 2b - remove
Step 3:
Annex 33D - replace all "DC to 100kHz" with "10Hz to 100kHz"
Step 4:
Table 33-13 item 3b - remove from table
Step 5:
Edit title with Paragraph number page 52, line 26 - name"PSE Stability"
Step 6:
Edit title with Paragraph number page 61, line 36 - name "PD Stability"

Cl **33**   *SC* **Table 33-5**   *P*   **50** *L*   **33** # **10**

Darshan, Yair   PowerDsine

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

The discharge time from Vport to 2.8V is 500ms. Lately in August/2002 we add that it will
be tested with external 400K resistor.
I have comment than and I repeat it now that it is wrong to condition it with external resistor.
And for those who originally suggested this additional comment to help with the ac
disconnect; The ac disconnect will work with internal 400k too..
The original idea was that when the power is removed from the port, the port will exhibit
2.8V and less after 500ms in order to prevent the case that 48V will be present for ever due
to Cpse=0.52uF max when power is removed.
The reasons for preventing the above are:
1. the next detection cycle may failed if Vport>2.8V
2. The port may exhibits considerable amount of energy 57V*57V*0.52uF for long time if it
is not discharged when the power is removed from the port.

SuggestedRemedy

Delete this new addition in the "note" column.
("Discharge time from Vport to 2.8Vdc with test bleed resistor of 400K")

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

This commentors concerns are addressed by the resolution of comment #105.

Cl **33**   *SC* **table 33-5**   *P*   **50** *L*   **33** # **105**

Dwelley, Dave   Linear Technology

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

500ms number is not consistent with 400k bleed and 0.52uF.

SuggestedRemedy

change to 624ms (or 650ms) or remove spec

Proposed Response   *Response Status* **C**

ACCEPT.

Change Table 33-5 note to item 13a to 320k.
Also add sentence: "In addition, it is recommended that the port be discharged when
turned off."

add test bleed resistor to figure 33-c.8 in the behavioural drawing and in the example
schematic. Ad hoc will provide marked up drawing.

TYPE: TR/technical required T/technical E/editorial   COMMENT STATUS: D/dispatched A/accepted R/rejected   SORT ORDER: Clause, Page, Line, Subclause   Page 9 of 26
RESPONSE STATUS: O/open   W/written C/closed   U/unsatisfied Z/withdrawn
Cl **33**   *SC* **table 33-5**

Cl **33**   *SC* **2.7.3**   *P*   **50** *L*   **45** # 194
Schindler, Fred   Cisco

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

The value of Cout and the power controller are within the PSE. Therefore, all PSE requirements can be made by making tradeoffs within the PSE. Using 520nF for the Cout parameter may unnecessarily limit this value.

SuggestedRemedy

Increase the value to 5uF. This limits the maximum power provided by a fully charged Cout to 8mW and permits more freedom for the PSE designer to make tradeoffs.

Proposed Response   *Response Status* **Z**

.520uF is .470uF plus 20%.

This makes AC disconnect harder.

Cl **33**   *SC* **table 33-5**   *P*   **50** *L*   **46** # 106
Dwelley, Dave   Linear Technology

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

it's not clear to me that we need to spec this

SuggestedRemedy

remove spec

Proposed Response   *Response Status* **Z**

see #194

Cl **33**   *SC* **Tabel 33-5**   *P*   **51** *L*   **20** # 18
McCormack, Michael   3Com

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

There are market requirements, specifically "wall wart" replacements that are co-shipped with wireless access points, IP phones, etc. that do not require anywhere near 15.7W. These devices should not be needlessly prohibited as to do so will force this specification to become irrelevant to certain large markets.

SuggestedRemedy

Reword sentence 1 of Note 2a as follows:
"From 0.44w to 15.4W (or maximum labelled rating of the PSE) load step."
Reword item a of note 2b as follows:
"From DC to 100kHz at 15.4 (or maximum labelled rating of PSE) load"
Reword item a of note 3 as follows:
"From 0.44 - 15.4W (or maximum labelled rating of PSE) at operating Vport"
Reword item a of note 4 by inserting "(or maximum labelled rating of PSE)" following each occurrence of 15.4W (I can't do subscripts in this tool to present the proper rewording . . .)

Proposed Response   *Response Status* **Z**

see #17

Cl **33**   *SC* **table 33-5 notes**   *P*   **51** *L*   **23** # 107
Dwelley, Dave   Linear Technology

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

"DC" restriction is much tighter than table item 2a. We need a better way to spec this, or we need to leave it out of the required spec and make it advisory

SuggestedRemedy

set lower frequency bound above DC or remove spec

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

Addressed by resolution to comment 15.

Cl **33**   *SC* **2.9**   *P*   **51** *L*   **47** # 161
Karam, Roger   CISCO

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

Note 5 on table 33-5
b) 5A max for 1msec. it seems like this could be 30A for 1us
why not spec power here...

see also note 10 page 52 line 13

SuggestedRemedy

respec for power.

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

See comment #12

TYPE: TR/technical required T/technical E/editorial   COMMENT STATUS: D/dispatched A/accepted R/rejected   SORT ORDER: Clause, Page, Line, Subclause   Page 10 of 26
RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn

Cl **33**   *SC* **2.9**

Cl **33** *SC* **Table 33-5** *P* **51** *L* **47** *#* **12**

Darshan, Yair PowerDsine

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

In note 5 part b: The sentence "Overshoot peak current is limited to 5A for 1ms. See figure 33C.4." is not represent the intention of figure 33C.4.

Figure 33C.4 specify that the max current after 1ms from the application of short circuit or applying power is 5A max. at anytime before 1ms the current is not limited.

In addition, the 1ms point is singular point that specifies two numbers at the same time (5A and Iinrush/Ilimit value).
Attached revised drawing.

And last: In order to define the peak current for time<1ms it is required to use the following equation: I(t<1ms)=(0.025/t)^0.5

See attached revised figure 33C.4 and 33C.24 as well.

SuggestedRemedy

Replace the sentence "Overshoot peak current is limited to 5A for 1ms. See figure 33C.4."

With: "Overshoot peak current is specified in figure 33C.4."

In addition, in page 51 lines11 and 12 change the following:
Add to the end of line 11: "See figure 33C.6"
Replace lines 12,13 with "Overshoot peak current is specified in figure 33C.4."

Replace figure 33C.4 with the attached revised figure.
Replace figure 33C.24 with the attached revised figure.

Proposed Response *Response Status* **C**

ACCEPT.

Promoted to a T

Cl **33** *SC* **table 33-5 notes** *P* **51** *L* **47** *#* **111**

Dwelley, Dave Linear Technology

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

need further discussion on this spec - can we spec it as total power? or charge?

also note 10 on pg. 52

SuggestedRemedy

spec as total power or charge, not current

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change Table 33-5 note 5 b) page 51 line 47 replace text with: "Measurement to be taken after 1ms to ignore startup transients."

Also Note 10 of same table page 52 line 12 replace text with: "Measurement to be taken after 1ms to ignore initial transients."

Cl **33** *SC* **table 33-5 notes** *P* **51** *L* **52** *#* **110**

Dwelley, Dave Linear Technology

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

note 7c is too complicated - also use "MPS" in 7a and 7b.

SuggestedRemedy

change to:

"If the MPS is absent for a duration between 300ms and 400ms, the PSE may or may not remove power from the port."

Proposed Response *Response Status* **C**

ACCEPT.

Cl **33** *SC* **table 33-5 notes** *P* **52** *L* **23** *#* **112**

Dwelley, Dave Linear Technology

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

Second sentence duplicates 33.2.8, isn't directly relevant to item 16

SuggestedRemedy

delete second sentence of note 16

Proposed Response *Response Status* **C**

ACCEPT IN PRINCIPLE.

Add: (refer to section 33.2.8)

TYPE: TR/technical required T/technical E/editorial   COMMENT STATUS: D/dispatched A/accepted R/rejected   SORT ORDER: Clause, Page, Line, Subclause   Page 11 of 26

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *Cl* **33**   *SC* **table 33-5**

Cl **33**　　*SC* **33.2.9**　　　　*P*　　**52**　*L*　　**27**　**#** `113`

Dwelley, Dave　　　　　　　　Linear Technology

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

This paragraph duplicates note 2b

SuggestedRemedy

remove paragraph

Proposed Response　　　*Response Status*　**Z**

PROPOSED ACCEPT IN PRINCIPLE.

Review similar comment on item 3b in table 33-13 and related paragraph in 33.3.5 (add comment #'s when found)

Cl **33**　　*SC* **2.10**　　　　*P*　　**52**　*L*　　**36**　**#** `162`

Karam, Roger　　　　　　　　CISCO

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

so why not make the pd come up to half its power (to be agreed upon)
if the switch can deliver that and that only before it totally deprives
the PD of the last drop so the customer can be served by a flashing message...

SuggestedRemedy

i would add this to be user friendly.

Proposed Response　　　*Response Status*　**C**

REJECT.

The commentor did not address specific changes to the document. This change is out of scope for the recirculation.

Cl **33**　　*SC* **2.10**　　　　*P*　　**52**　*L*　　**40**　**#** `66`

Thompson, Geoff　　　　　　　Nortel

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

Leads one to believe that if the current BEING DRAWN is not up to the class limit then the PS reserve can be reallocated. This is not the intention.

SuggestedRemedy

Add text at the end of the sentence to the effect that the amount of current being drawn presently or in the past is not qualified information for this

Proposed Response　　　*Response Status*　**C**

ACCEPT IN PRINCIPLE.

The PSE may manage the allocation of power based on additional information beyond the classification of the attached PD. Allocating power based on additional information about the attached PD, and the mechanism for obtaining that additional information, is beyond the scope of this standard.

Allocating power shall not be based solely on the historical data of the power consumption of the attached PD.

TYPE: TR/technical required T/technical E/editorial　　COMMENT STATUS: D/dispatched A/accepted R/rejected　　SORT ORDER: Clause, Page, Line, Subclause　　　Page 12 of 26

RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn

Cl **33**　　　*SC* **2.10**

Cl **33**   *SC* **33.2.11**   *P*   **53** *L*   **1** *#* **19**
McCormack, Michael   3Com

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

Requiring a minimum power draw from a PD is problematic for certain very low power devices such as thermostats, cardkey readers and other pieces of office automation equipment. Such devices will not continuously draw 1/2 watt unless the power is artificiall consumed (e.g. burned off with a load resistor.) Such wasted power will likely present market problems with such energy conservation initiatives as the US EPA's EnergyStar or the EU's 'Specific Actions for Vigorous Energy Efficiency (SAVE)' programs. Regardless o governmental agency issues, certain applications, such as thermostats, have fundamental problems with requirements that generate spurious heat.

The committee has invested seventeen months developing a non-power wasting detection scheme which has been vigorously modeled, tested and presented during the last year's meetings. We should eliminate DC power maintenance signals which inherently waste energy for the well developed AC based scheme. This has the added benefit of removing options from the standard and their associated differing behaviors.

SuggestedRemedy

Stike item a and reword the section to require the singular AC impedance test.

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

Provide a minimum valid MPS time of 60msec in Table 33-5.

This corrects a deficiency in the State Machine where the minimum value of MPS_valid is now effectively zero.

Also, add "after the end of the last valid MPS." to the end of page 53 line 4.

On page 61 at line 48 add "The PD shall maintain a valid MPS for a minimum of 75msec followed by an optional MPS dropout for no longer than 250msec."

Vote:
Y 13 N 3 A 1

Cl **33**   *SC* **2.11**   *P*   **53** *L*   **26** *#* **163**
Karam, Roger   CISCO

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

table 33-6
item 2a, why limit the current

also item 2b remove

SuggestedRemedy

keep the current spec open do we really need this?

item 2b is redundant now...

Proposed Response   *Response Status* **C**
REJECT.

The current limit is required for safety, as it is required for any voltage source in the system. The 1ma number will be increased to 5mA, see #115.

No justification is given for removal of item 2b. This parameter is a duplicate for reader convenience from figure 33-7 and is replicated in table 33-6.

Cl **33**   *SC* **table 33-6**   *P*   **53** *L*   **26** *#* **115**
Dwelley, Dave   Linear Technology

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

1ma seems low - this spec should prevent damage, not drive implementation.

SuggestedRemedy

change to 10ma

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

Committee agrees that 5mA is an appropriate number to match resistor detection.

Cl **33**   *SC* **2.11**   *P*   **53** *L*   **33** *#* **185**
Schindler, Fred   Cisco

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

The parameter field states: "from the PI to the PSE port." The PI is part of the PSE. This should be reworded to clarify the intent.

SuggestedRemedy

Change the statement to: "at the PI of the PSE port."

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

Cl **33**　　*SC* **table 33-6**　　*P*　**53**　*L*　**46**　# **116**

Dwelley, Dave　　　　　　　　Linear Technology

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

5Hz spec not needed here - but we do need to define a test load (with a frequency range c defined capacitance), probably at 33-10 and 33-11.

SuggestedRemedy

remove 5Hz spec

Proposed Response　　　*Response Status* **Z**

Cl **33**　　*SC* **Figure 33-12**　　*P*　**54**　*L*　**44**　# **3**

Burton, Scott　　　　　　　　Mitel Networks

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

Figure indicates a tolerance of +/-1% on 2MEG resistor, while value in Table 33-6 is 2000kohms minimum.

SuggestedRemedy

Change table or figure to make them agree.

Proposed Response　　　*Response Status* **C**

ACCEPT IN PRINCIPLE.

Make lower limit 1980 kohms

Cl **33**　　*SC* **33.3.1**　　*P*　**55**　*L*　**16**　# **118**

Dwelley, Dave　　　　　　　　Linear Technology

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

"same nominal voltage" isn't accurate when data is flowing

SuggestedRemedy

change to:
"same nominal average voltage"

Proposed Response　　　*Response Status* **C**

ACCEPT.

Cl **33**　　*SC* **3.2.2**　　*P*　**56**　*L*　**32**　# **164**

Karam, Roger　　　　　　　　CISCO

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

are we requiring the PD to sense if the power is coming on the TP cable? more added circuitry ? why?

SuggestedRemedy

remove this requirement.

Proposed Response　　　*Response Status* **C**

REJECT.

This is a state diagram modelling behaviour, but this behaviour is required. These variables are not available to the outside world. A PD designer is not required to implement these variables in their design in hardware.

Cl **33**　　*SC* **3.22**　　*P*　**56**　*L*　**34**　# **68**

Thompson, Geoff　　　　　　　Nortel

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

Editorial paste error
The correct text is not present, rather the text from the previous variable has been pasted here

SuggestedRemedy

Put in the appropriate values for the power_received variable
I would guess that they are something like:
FALSE: Power not being received
TRUE: Power being received

Proposed Response　　　*Response Status* **C**

ACCEPT.

Fix tex to sayt:

FALSE: Power not being received
TRUE: Power being received

TYPE: TR/technical required T/technical E/editorial   COMMENT STATUS: D/dispatched A/accepted R/rejected   SORT ORDER: Clause, Page, Line, Subclause
RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn

Page 14 of 26
Cl **33**　　*SC* **3.22**

Cl **33**   *SC* **Figure 33-13**   *P*   **57** *L*   **2** **#** **205**
Law, David   3Com

Comment Type **T**   *Comment Status* **A**   *State Machine*

There is no power on reset of this state diagram. Doesn't the PD need to present the pd_signature to request power when there is no power present. This seems to indicate that power on should force the PD state machine to NOT_MDI_POWERED state if mdi_power_required = false and to the REQUESTING_POWER if mdi_power_required = true. The current text for the pd_reset isn't very clear, it states that reset is true 'until such time the portion of the PD implementing the PD state diagram has reached the operating region' however what operating region means isn't defined. If it is assumed it is the power supply that must reach the operating region we then have a problem as the PD is reset until powered.
It is less clear what a PD should do if it supports the low power mode bit in the MII control register (bit 0.11) and this bit is set. In the case of a PD this bit should probably be a don't care.

SuggestedRemedy

1. Add new variable:
power_on
Condition that is true until such time as the power supply for the device that contains the PD state diagrams has reached the operating region.
Values: false; the device is completely powered (default).
    true; the device has not been completely powered.

2. power_on should force the PD state machine to NOT_MDI_POWERED state if mdi_power_required = false and to the REQUESTING_POWER if mdi_power_required = true.

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

Cl **33**   *SC* **Figure 33-13**   *P*   **57** *L*   **6** **#** **213**
Law, David   3Com

Comment Type **T**   *Comment Status* **A**   *State Machine*

Shouldn't present_mps be set to false in the NOT_MDI_POWERED state. If the state diagram is in the MDI_POWERED state and a reset is applied by setting pd_reset to true the state diagram would instantly transfer to the NOT_MDI_POWERED state yet present_mps would remain true as it was in the MDI_POWERED state.

SuggestedRemedy

Add present_mps <= false to the NOT_MDI_POWERED state.

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

Cl **33**   *SC* **33.3.3**   *P*   **57** *L*   **44** **#** **165**
Karam, Roger   CISCO

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

we have a typo here separted should be separated.
also on the technical side, if we specify what the band is would be much better.

SuggestedRemedy

add the signature band in. 15k-19k and 26.5k-33k is the non-compliant pd band

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

Reword to clarify the guardband.

Cl **33**   *SC* **table 33-8**   *P*   **58** *L*   **7** **#** **121**
Dwelley, Dave   Linear Technology

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

need to clarify that chord is from 2.7 to 3.7, not 1.7 to 2.7

SuggestedRemedy

add "...chord within this range"

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

Cl **33**   *SC*   *P*   **58** *L*   **13** **#** **166**
Karam, Roger   CISCO

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

input capacitance in table 33-8 has a max of .11uf

SuggestedRemedy

make it 120nf to match the rest.

Proposed Response   *Response Status* **C**
REJECT.

.12uF includes cable plant. .11uF is PD.

Cl **33**   *SC* **3.4**   *P* **58** *L* **51** # **186**

Schindler, Fred   Cisco

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

As the standard is currently written, a valid PD can transition into detection operation and class operation at the same voltage threshold (incorrectly at 10V). System noise and the PD's frequency response can then result in oscillation between these two modes of operation. That is, the PSE is in detection mode at around 10V but the PD is in classification mode at this same threshold and the current demands of each mode are different.

SuggestedRemedy

Add the requirement that that the PD load characteristic provides the class signature above the maximum detection signature voltage and that the PD voltage remain (one volt) above this class mode voltage transition threshold for currents greater than 1mA. This would increase the minimum voltage at which a PD is in class mode and provide a guard band between the two modes of operation within the system.

Also see comments made for p59.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change Table 33-12 minimums of 10V to 11V.

The numbers is this table were inconsistent with table 33-8 and should have been at least 10.1.

Vote
Y 8   N 2   A 2
Passes 80%

Cl **33**   *SC* **33.3.4**   *P* **58** *L* **51** # **124**

Dwelley, Dave   Linear Technology

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

the monotonicity clause is still broken - this needs further discussion (or eliminate FCMV mode)

SuggestedRemedy

"The PD voltage shall monotonically and continuously increase with current for all currents above 1mA, at all voltages below 28V. No discontinuities (ie, hysteretic comparators) are allowed in this range."

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Delete the sentence at page 58 line 51 and replace with: "The PD shall not oscillate when forced with any current from 5mA to the bottom of the PD's class as specified in Table 33-12. Example: A class 2 PD shall not oscillate when tested with currents between 5mA and 16mA."

Cl **33**   *SC* **3.4**   *P* **59** *L* **39** # **187**

Schindler, Fred   Cisco

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

The minimum class voltage overlaps with the current maximum detection voltage. See comment made for p44.

SuggestedRemedy

Readjust the minimum class voltage to a voltage above the maximum allowable detection voltage. Recommend one volt above the maximum allowable detection voltage. See comments made for p58.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Commentors comments are resolved with the resolution of comment #186.

Cl **33**   *SC* **table 33-13**   *P* **60** *L* **17** # **126**

Dwelley, Dave   Linear Technology

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

items 2 and 5 are redundant. Item 2 should spec max only (since the max is defined by power), and item 5a should spec min only (since the min is defined by current). These two specs should be next to each other.

SuggestedRemedy

eliminate min spec for item 2
eliminate max spec for item 5a
remove "min input voltage" phrase from 5a conditions
reorder table to put items 2 and 5 next to each other

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **33**   *SC* **table 33-13**   *P* **60** *L* **21** # **127**

Dwelley, Dave   Linear Technology

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

Item 3b has no spec

SuggestedRemedy

remove item 3b or add a spec

Proposed Response   *Response Status* **Z**

Cl **33**   *SC* **33.3.5**   *P*   **60** *L*   **35** # **20**
McCormack, Michael   3Com

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

Requiring a minimum power draw from a PD is problematic for certain very low power devices such as thermostats, cardkey readers and other pieces of office automation equipment. Such devices will not continuously draw 1/2 watt unless the power is artificiall consumed (e.g. burned off with a load resistor.) Such wasted power will likely present market problems with such energy conservation initiatives as the US EPA's EnergyStar or the EU's 'Specific Actions for Vigorous Energy Efficiency (SAVE)' programs. Regardless c governmental agency issues, certain applications, such as thermostats, have fundamental problems with requirements that generate spurious heat.

The committee has invested seventeen months developing a non-power wasting detection scheme which has been vigorously modeled, tested and presented during the last year's meetings. We should eliminate DC power maintenance signals which inherently waste energy for the well developed AC based scheme. This has the added benefit of removing options from the standard and their associated differing behaviors.

SuggestedRemedy

Remove the minimum current draws from Table 33-13 for items 5a and 5b.

Proposed Response   *Response Status* **Z**

see comment #19 and #199

Cl **33**   *SC* **table 33-13**   *P*   **60** *L*   **40** # **128**
Dwelley, Dave   Linear Technology

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

It's not clear to me that the turn-off threshold needs to be so high. This is unnecessarily limiting for some applications.

SuggestedRemedy

Add min of 30V to 6a
change 6b to 22V min (top of class range plus arbitrarily chosen 2V guardband), no max
change 1st sentence of note 6 accordingly
change 2nd sentence of note 6:
"The PD shall include adequate hysteresis to ensure that it turns on and off without oscillation and within the first trial at any load value and with up to 20ohms resistance in series with the input."

Proposed Response   *Response Status* **Z**

see #167

Cl **33**   *SC* **3.5**   *P*   **60** *L*   **48** # **177**
Karam, Roger   CISCO

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

we are missing a PD discharge spec. it looks like we can plug a cable in a PD, charge it up, unplug then plug again and not have the PD power up or
even get discovered for a few seconds, is this not a concern for the user pluggin the PD ....

SuggestedRemedy

Proposed Response   *Response Status* **C**

REJECT.

The commentor did not supply a suggested remedy. A TR requires a suggested remedy.

Suggested remedy from Roger: PD voltage at MDI should drop below 200mV within 1 sec. (this discharges PD, allow for rediscovery and prevents damage to PSE.)

The spec does not preclude a designer from discharging his PD within a time period. It is allowed by the spec but is not mandated.

Cl **33**   *SC* **33-13 notes**   *P*   **61** *L*   **8**   # **129**
Dwelley, Dave   Linear Technology   *PA*

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

lower limit of 0.1ohms is arbitrary

SuggestedRemedy

change to:

"...series resistance of up to 20ohms..."

Proposed Response   *Response Status* **C**

ACCEPT.

Cl **33**   *SC* **33-13 notes**   *P*   **61** *L*   **16**   **#** **130**
Dwelley, Dave   Linear Technology

Comment Type   **T**   *Comment Status*   **A**
    Note 5a more or less duplicates note 2

SuggestedRemedy
    combine notes 2 and 5a

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

    Resolution to comment #130
    10/3/02 dmd

    Keep notes separated, but segregate as follows:
    1) Delete Note 2, item b. It appears that the b) label is misplaced and should include both
    "Iport=10mA" lines.
    2) Delete Note 2, item c (consistent with comment 126) and delete Table 33-13 item 2
    minimum spec (Pport1).
    3) Delete entire spec 5a in table. 5b becomes 5. New Parameter is "Input Current". New
    label is "Iport". Remove 10mA min spec completely (consistent with Mike's DC duty cycle
    comment).
    4) Delete Note 5a, item a (consistent with comment 126)
    5) Combine Notes 5a and 5b into Note 5
    6) New Note 5 should read:
    a) Ripple current (Iac) superimposed on the DC current level (Idc) is allowed if the total
    input power is less than or equal to Pport(max). Peak current is allowed to rise to
    Iport(max) for 50ms max and 5% duty cycle max. The RMS, DC and ripple current are
    bounded by the following equation: Irms = sqrt(Idc^2 + Iac^2)
    b) Inrush current at startup will be limited by the PSE if Cport < 180µF, as specified in
    Table 33-5. If Cport => 180uF, inrush current shall be limited by the PD so that Iport(max)
    is satisfied.
    7) Renumber table so that 2 and 5 are next to each other.
    8) Delete Note 5b item c, move to table 33-14
    9) Add note to table 14 item 1 note "see note 1" - change Iin label to Iport.
    10) Note 1. I Port =10mA min. for C port < 180µF. I Port = 10mA * C port [µF] /180 for C
    port > 180µF or the PD will need to make special accommodation to ensure that the 10mA
    minimum current be maintained when the PD input voltage is dropped from 57V to 44V at
    the maximum allowable PSE slew rate.

Cl **33**   *SC* **3.5**   *P*   **61** *L*   **29**   **#** **167**
Karam, Roger   CISCO

Comment Type   **TR**   *Comment Status*   **R**
    table 33-13 note 6

    the PD turn on is at <=42v, that is too high and will exclude
    some serious applications out here, there will be applications
    that have a supply at 40-42v plus the normal 10%....
    ie car batteries, Some countries overseas with 42v infrastructures.

SuggestedRemedy
    bring the UVLO voltage down to about 35v or so.
    and the lower off threshhold around 27v.

Proposed Response   *Response Status*   **C**
    REJECT.

    This comment is out of scope because this number has not changed for several drafts.
    You must demonstrate that the specified number will result in interoperability problems.

Cl **33**   *SC* **33-13 notes**   *P*   **61** *L*   **33**   **#** **131**
Dwelley, Dave   Linear Technology

Comment Type   **TR**   *Comment Status*   **A**
    99% is difficult to measure in the presence of real-world noise

SuggestedRemedy
    change to 90%

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

    Change page 61 line 32 and 33 text to: "Classification signature shall be valid within Tclass
    and remain valid for the duration of the classification period."

Cl **33**   *SC* **33.3.6**   *P*   **61** *L*   **41** # **199**
Law, David   3Com

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

Remove the method a), minimum current draw, option. This option causes the PD to dissipate in the region of 500mW which is no longer unnecessary as the method b) can provide the same functionality without the power dissipation. Having a device dissipate this level of power just to maintain its power supply is wasteful of energy and may long term prevent DTE via MDI Power devices with challenges due to energy efficiency marking such as Energy Start in the US and similar schemes elsewhere in the world.

I realize that this comment can be considered out of scope for the re-circulation ballot however I will probably submit this comment a sponsor ballot and wished to give the committee warning that I presently intend to do so.

SuggestedRemedy

Remove the method a), minimum current draw, option, and associated text from the draft.

Proposed Response   *Response Status* **Z**
see #19 and #20

Cl **33**   *SC* **33.3.6**   *P*   **61** *L*   **46** # **21**
McCormack, Michael   3Com

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

Requiring a minimum power draw from a PD is problematic for certain very low power devices such as thermostats, cardkey readers and other pieces of office automation equipment. Such devices will not continuously draw 1/2 watt unless the power is artificiall consumed (e.g. burned off with a load resistor.) Such wasted power will likely present market problems with such energy conservation initiatives as the US EPA's EnergyStar or the EU's 'Specific Actions for Vigorous Energy Efficiency (SAVE)' programs. Regardless o governmental agency issues, certain applications, such as thermostats, have fundamental problems with requirements that generate spurious heat.

The committee has invested seventeen months developing a non-power wasting detection scheme which has been vigorously modeled, tested and presented during the last year's meetings. We should eliminate DC power maintenance signals which inherently waste energy for the well developed AC based scheme. This has the added benefit of removing options from the standard and their associated differing behaviors.

SuggestedRemedy

remove the signature component "a" and rewrite the section to require only the singular AC impedance component.

Proposed Response   *Response Status* **Z**
see #19 #20 #199

Cl **33**   *SC* **33.3.6**   *P*   **61** *L*   **49** # **133**
Dwelley, Dave   Linear Technology

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

This is a problem for figure 33-11

SuggestedRemedy

need to find suitable language to allow 33-11 to work - or disallow 33-11

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

see #13

Cl **33**   *SC* **33.3.6**   *P*   **61** *L*   **49** # **13**
Darshan, Yair   PowerDsine

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

The sentence "Component b) of the MPS ....at the PD terminal" can not be true in unipolar circuit as described by figure 33-11.

The original purpose of this sentence is already covered in figure 33-11 by locating Csig at the wire side and by the note for item 4a in table 33-6 ("... anet capacitive component")

SuggestedRemedy

Delete lines 49-50.

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

Cl **33**   *SC* **3.6**   *P*   **62** *L*   **12** # **168**
Karam, Roger   CISCO

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

missing the Zac1 description for the PD input requirements on the AC disconnect

SuggestedRemedy

reference figures 33-10, 33-11, and 33-12 for the PD requirements on its mps for the AC disconnect.

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

This comment is asking for an editorial change.

Editor will add reference to figures 33-10 and 33-11.

Cl **33**   *SC* **4.1**   *P*   **62**   *L*   **29**   # **188**
Schindler, Fred   Cisco

Comment Type   **TR**   *Comment Status* **A**   *PA*
The current wording is "The PSE or PD shall provide electrical isolation ..."
Isolation is required for all connections made to the MDI as per 802.3d.

SuggestedRemedy
Change the wording to "The PSE and PD shall provide electrical isolation ..."

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

See #69

Cl **33**   *SC* **33.4.1**   *P*   **62**   *L*   **30**   # **134**
Dwelley, Dave   Linear Technology

Comment Type   **TR**   *Comment Status* **D**
currently this mandates Environment B data and optical, RF, or battery power - I don't think
this is what we intend. In particular, this eliminates the "double-insulated" PD.

SuggestedRemedy
change to "...electrical isolation between any externally accessible circuitry, including frame
ground..."

Proposed Response   *Response Status* **Z**

from 14.3.1.1
The MAU shall provide isolation between the DTE Physical Layer circuits including frame
ground and all MDI leads including those not used by 10BASE-T. This electrical
separation shall withstand at least one of the following electrical strength tests.

Cl **33**   *SC* **4.1**   *P*   **62**   *L*   **30**   # **69**
Thompson, Geoff   Nortel

Comment Type   **TR**   *Comment Status* **A**   *PA*
The text: "The PSE or PD shall provide electrical isolation between..."
says that there only has to be isolation in one of the two. I think that as a PSE vendor it
should be in the PD and I won't have any islation at all in my devices.

SuggestedRemedy
Change to: "The PSE and PD shall each provide electrical isolation between..."

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

Cl **33**   *SC* **33.4.1.1.1**   *P*   **63**   *L*   **10**   # **1**
Burton, Scott   Mitel Networks

Comment Type   **T**   *Comment Status* **X**
Environment A requirements reference the 1500VAC/2250VDC isolation requirements of
40.6.1.1 etc. Should this not instead reference the 500Vrms segment to ground
Environment A repeater requirement of, for example 41.4.3? The same comment also
applies to the Environment B subclause.

SuggestedRemedy
Change subclauses 33.4.1.1.1 and 33.4.1.1.2 to reference subclauses 9.7, 27.5.3 and
41.4.3

Proposed Response   *Response Status* **Z**

Cl **33**   *SC* **4.4**   *P*   **65**   *L*   **4**   # **189**
Schindler, Fred   Cisco

Comment Type   **TR**   *Comment Status* **X**
A voltage ripple is permitted in table 33-5, line 48. The recommended setup in figure 33-17
provides a current path through both common mode loads. Therefore, resulting in
approximately half the voltage across both loads. This is 250mV for a pair-to-pair noise of
500mV. Note that the topology of the test circuit in 33-18 is roughly the same as that of 33-
17.

A current imbalance of 8mA is permitted in table 33-5, line 40. The line resistance for a
single MDI line is limited by this requirement. With a 100m cable, this amounts to a R x
100 x 8 /2 = 50mV. That is, 125 m-ohm/m maximum. Is 8mA too high to meet the voltage
ripple limit in line 48.

SuggestedRemedy
An adhoc team be formed to identify a better topology.

Proposed Response   *Response Status* **Z**

Cl **33**   *SC* **4.8**   *P*   **68**   *L*   **3**   # **71**
Thompson, Geoff   Nortel

Comment Type   **T**   *Comment Status* **A**   *PA*
ISO/IEC 11801 - 2002 has been published.
I have a pdf copy of the FDIS which is close enough for our work.

SuggestedRemedy
Update this reference and all others to 2002 edition.
Remove the note

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

Cl **33** *SC* **4.8** *P* **69** *L* **41** # 72
Thompson, Geoff Nortel

Comment Type **TR** *Comment Status* **A** *PA*
PSE in this subclause is really talking about "Midspan PSE"
"PSE" is not technically correct.

SuggestedRemedy
Change all instances to "Midspan PSE"

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

Cl **33** *SC* **6.1.2.4** *P* **75** *L* **33** # 171
Karam, Roger CISCO

Comment Type **TR** *Comment Status* **R**
table 33-17
we never agreed to pay for circuitry that can tell if the PD is powered
over TP cables....

SuggestedRemedy
state that is optional or remove

Proposed Response *Response Status* **C**
REJECT.

see #164

Cl **33** *SC* **6.1.2.5** *P* **75** *L* **44** # 170
Karam, Roger CISCO

Comment Type **TR** *Comment Status* **R**
for '010' the detection function is normal?
define Normal?

SuggestedRemedy
please clarify normal...

Proposed Response *Response Status* **C**
REJECT.

The text clearly points the reader to the definition of normal in Table 33-17.

Cl **33** *SC* **6.1.2.6** *P* **76** *L* **7** # 169
Karam, Roger CISCO

Comment Type **TR** *Comment Status* **R** *PR*
need a note that pair control is optional.

SuggestedRemedy
for someone reading the draft it is not clear that pair control
is optional though we verbally agree to it

Proposed Response *Response Status* **C**
REJECT.

Implied in the text.

Cl **33** *SC* **33.6.1.2.6** *P* **76** *L* **8** # 198
Law, David 3Com

Comment Type **T** *Comment Status* **A**
It is not clear from the bit description if this is a PSE or a PD related bit.

SuggestedRemedy
Please clarify.

Proposed Response *Response Status* **C**
ACCEPT IN PRINCIPLE. Promoted to T

Pull bit 12.0 from table 33-17 and corresponding text. Shift the bits of table 33-17 down 1.
Search text for '12.' bits and readjust. Remove 30.9.2.1.3 and associated text.

Cl **33A** *SC* *P* **89** *L* **10** # 14
Darshan, Yair PowerDsine

Comment Type **TR** *Comment Status* **A** *Test*
Figure 33A.1 can not be recommended as test circuit due to the fact that it is not the worst
case representation.
For test circuit see Annex 33C.

SuggestedRemedy
Delete the line 10 starting with "The circuit in figure 33A.1...test purposes."

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

Cl **33C**   *SC* **33C**   *P*   **93** *L*   **1** **#** 156
Dwelley, Dave   Linear Technology

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

It's not clear to me that this level of detail is required. It goes way beyond anything else in
802.3. For a manufacturer to design a PSE or PD, they must be schooled in the art of
power supply design, period. It's not our job to educate them - and we haven't done a
complete job of it here.

SuggestedRemedy

Remove 33C. Replace, perhaps, with an illustrative block-diagram schematic similar to
Yair's PSpice test schematic shown in prior meetings.

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change title to:
Annex 33C - Informative

And add this sentence below:
This annex is informative only and is not part of the standard.

Also add to other three Annexes.

Also add recommended in front of test configurations

Change any "shall" to "must" in any informative annex.

Cl **33C**   *SC* **33C.1.1**   *P*   **94** *L*   **33** **#** 139
Dwelley, Dave   Linear Technology

Comment Type   **T**   *Comment Status* **X**   *Test*

Test Procedure is an example, not mandatory

SuggestedRemedy

Add "Example" before "Test Procedure PSE-1..." (also in most other 33C figures)

Proposed Response   *Response Status* **Z**

Cl **33C**   *SC* **33c.1.2**   *P*   **94** *L*   **41** **#** 173
Karam, Roger   CISCO

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

missing what to look for, all right what do we look for.
i looked back at note 2a and we ask folks to look for the dv/dt
and no mention that the vport should not dip below 44v???

again regulation downstairs means the supply should not fall below
its min allowed for operation...

SuggestedRemedy

define more what to look for either in note 2a or here.

Proposed Response   *Response Status* **C**

REJECT.

These are informative annexes and are not part of the standard. The test specification
does not contain a technical error.

Cl **33C**   *SC* **c.1.2**   *P*   **95** *L*   **12** **#** 172
Karam, Roger   CISCO

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

a=4 for alternative B or 1 for alternative A or 3 for alternative A, MDI-X or Auto MDI

SuggestedRemedy

clarify what is meant by the pins, i think i put an editorial last time
on this and nothing was done...

Proposed Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Editor to add table at beginning of annex as notes are the same for each one. Add note to
each figure referring to table.

Cl **33C**   *SC* **c.1.4**   *P*   **96** *L*   **55** **#** 183
Karam, Roger   CISCO

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

missing a procedure to make sure that a PSE does not detect another PSE
this would be a nice addition given that we took the 70k down to 45k...

SuggestedRemedy

add a simple test to make sure that a PSE does not power another PSE
and state that if it does not damage should take place....

Proposed Response   *Response Status* **C**

REJECT.

The specification has no requirement for this, therefore no PICS exists and there is no
need for a test procedure.

Cl **33C**   *SC* **33C.1.4**   *P*   **97**   *L*   **6**   # **141**
Dwelley, Dave   Linear Technology

Comment Type **T**   *Comment Status* **A**   *Test*
S1 not needed in block diagram figure

SuggestedRemedy
remove S1, replace with continuous wire

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

remove S1 from behavioural model, relocate S1 text in schematic to be close to FET.

Cl **33C**   *SC* **33C.1.4**   *P*   **97**   *L*   **30**   # **142**
Dwelley, Dave   Linear Technology

Comment Type **T**   *Comment Status* **A**   *Test*
"setup principles" section needs some work

SuggestedRemedy
Change title to read: "Example test setup principles"
Change 1) to read: "The function of S1 is...port voltage is either 0 or 42V"
Change 3) to read: "The capacitive load value is chosen to emulate a short..."
Change 4) to read: "The test can be repeated only if the capacitive load is discharged and S1 is reset".

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

Cl **33C**   *SC* **c.1.4**   *P*   **97**   *L*   **31**   # **176**
Karam, Roger   CISCO

Comment Type **TR**   *Comment Status* **A**   *Test*
we ask S1 to switch in 50us yet on page fig 33c.4 we limit that peak to 5A, in reality it could be much higher?

SuggestedRemedy
possibly spec this as power or change the peak.

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

The commentors issues are addressed by the resolution of comment #12.

Cl **33C**   *SC* **c.1.4**   *P*   **98**   *L*   **6**   # **179**
Karam, Roger   CISCO

Comment Type **TR**   *Comment Status* **A**
again the max I in a few usec exceeds the 5A number
we have here, so we need to explain the 1msec better
spec this for power since within a few us we may reach higher
current...

SuggestedRemedy

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

Commentors concerns are addressed by the resolution of comment #12.

Cl **33C**   *SC* **33C.1.4**   *P*   **98**   *L*   **8**   # **144**
Dwelley, Dave   Linear Technology

Comment Type **T**   *Comment Status* **A**   *Test*
figure needs slight mods

SuggestedRemedy
change "= 5A max" to "<= 5A"
show zero at bottom of Y-axis
add squigle marks to indicate that Y-axis has a break

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

Cl **33C**   *SC* **33C.1.5**   *P*   **99**   *L*   **7**   # **145**
Dwelley, Dave   Linear Technology

Comment Type **T**   *Comment Status* **A**   *Test*
need to indicate PSE initial condition, label S1

SuggestedRemedy
Add "PSE in normal powering mode" label - or "PSE in POWER_ON state", to be consistent with the state machine 33.2.3.5 (and correct throughout 33C)
Add label to S1

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

choose: "PSE in normal powering mode"

follow rest of recommendations

TYPE: TR/technical required T/technical E/editorial   COMMENT STATUS: D/dispatched A/accepted R/rejected   SORT ORDER: Clause, Page, Line, Subclause
RESPONSE STATUS: O/open   W/written C/closed   U/unsatisfied Z/withdrawn

Page 23 of 26

Cl **33C**   *SC* **33C.1.5**

Cl **33C**   *SC* **33C.1.9**   *P*   **102** *L*   **19** # **146**
Dwelley, Dave   Linear Technology

Comment Type **T**   *Comment Status* **X**   *Test*
add bleed resistor per table 33-5, item 13a note

SuggestedRemedy
add 400k resistor from CC to BB on both block diagram and example circuit

Proposed Response   *Response Status* **Z**

Cl **33C**   *SC* **1.9**   *P*   **103** *L*   **1** # **191**
Schindler, Fred   Cisco

Comment Type **TR**   *Comment Status* **A**   *Test*
The port turn off time is specified with a 400k-ohm bleed resistor but this is not provided for in the test outline.

SuggestedRemedy
Provide a 400k-ohm bleed resistor.

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

Commentors concerns were resolved with the resolution of comment #105.

Cl **33C**   *SC* **33C.1.10**   *P*   **104** *L*   **9** # **147**
Dwelley, Dave   Linear Technology

Comment Type **T**   *Comment Status* **A**   *State Machine*
Need PSE initial condition

SuggestedRemedy
Add "PSE in discovery mode" or "PSE in DETECTION state" to be consistent with state machine 33.2.3.5

also 33C.1.11 and 33C.1.12

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

change to "PSE in discovery mode" and follow rest of recommendations - occurs in three places

---

Cl **33C**   *SC* **1.11**   *P*   **106** *L*   **7** # **192**
Schindler, Fred   Cisco

Comment Type **TR**   *Comment Status* **D**   *Test*
The value of the maximum signature resistor is 500k and is not correct.

SuggestedRemedy
Use the correct value of 2M-ohms for the maximum signature resistor. Adjust test step on line-45 to 2.04M-ohm.

Proposed Response   *Response Status* **Z**

Cl **33C**   *SC* **c.2.1**   *P*   **108** *L*   **17** # **181**
Karam, Roger   CISCO

Comment Type **TR**   *Comment Status* **R**   *Test*
both figures 33c.14 and 33c.15 lack the min load to be switched in as per a real application...

SuggestedRemedy
add a 'real' load to the 27k in parallel and verify the workings of ac disconnect...

Proposed Response   *Response Status* **C**
REJECT.

This load is not needed to perform test procedure PSE-13.

Cl **33C**   *SC* **33C.2.1**   *P*   **108** *L*   **20** # **150**
Dwelley, Dave   Linear Technology

Comment Type **T**   *Comment Status* **A**
Two schematics are redundant
No PSE initial condition spec'd for PSE-i

SuggestedRemedy
Add "a possible example..." text added to schematic (like p. 109), and combine schematic on page 109 with this one (two alternate "Valid MPS" hookups to the same 2meg section). Eliminate PSE-i1 figure.
Add "PSE in normal powering mode" to PSE-i figure.

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

Promoted to a T

Dwelley has provided a drawing to the editor.

Cl **33C**   *SC* **c.2**   *P*   **108**   *L*   **21**   # **174**
Karam, Roger   CISCO

Comment Type   **TR**   *Comment Status*   **R**   *Test*
    missing a 'Real load' + a switch from figures 33c.14 and 33c.15
    after all we need to make sure we stay powered when the load in in there

SuggestedRemedy
    add switches with the real loads possibly min and max.

Proposed Response   *Response Status*   **C**
    REJECT.

    Not neccesary for circuit to function properly.

Cl **33C**   *SC* **33C.2.2**   *P*   **111**   *L*   **4**   # **151**
Dwelley, Dave   Linear Technology

Comment Type   **T**   *Comment Status*   **A**   *Test*
    Several elements missing from figure

SuggestedRemedy
    Add PSE initial condition
    Add dividing line between "Iport" and CC
    Add "Test Load" label
    Add "One possible..." label
    Add dividing line between figure and schematic

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

Cl **33C**   *SC* **c.2.2**   *P*   **111**   *L*   **45**   # **175**
Karam, Roger   CISCO

Comment Type   **T**   *Comment Status*   **R**   *Test*
    add a note here saying that a Network/Impedance analyzer can be used
    to substitute for this.

SuggestedRemedy

Proposed Response   *Response Status*   **C**
    REJECT.

    These are examples. Many different test methods are possible.

Cl **33C**   *SC* **c.3.1**   *P*   **111**   *L*   **50**   # **180**
Karam, Roger   CISCO

Comment Type   **TR**   *Comment Status*   **A**   *Test*
    missing classification oscillation procedure.
    i know this is the detection section but the circuit applies.

SuggestedRemedy
    add the test for making sure that a PD will not oscillate during classification, basically
    ramp the current up and look for any unstable
    behaviors....

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

    Add a line to Procedure SIG-1 on page 114 :

    d) Test V-I slope monotonicity

    And test text to be supplied by ad hoc.

Cl **33C**   *SC* **4.1**   *P*   **115**   *L*   **31**   # **193**
Schindler, Fred   Cisco

Comment Type   **TR**   *Comment Status*   **A**   *Test*
    The maximum PD offset voltage is 1.9V not 2.7V -- see p58.

SuggestedRemedy
    Use the correct value of 1.9V.

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

Cl **33D**   *SC* **33D.1**   *P*   **121**   *L*   **11**   # **155**
Dwelley, Dave   Linear Technology

Comment Type   **TR**   *Comment Status*   **A**
    The requirements spelled out here are very general, and may be oversimplified. Strictly
    enforcing these requirements will eliminate some valid, non-oscillating, cost-effective
    solutions. We need more work on this section (and the matching 33-5 and 33-13 tables)

SuggestedRemedy
    Solicit expert opinions outside the group (S. Cuk/Teslaco?)

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

    Commentors concerns are addressed by the resolution of comment #15.

Cl **33D**   *SC* **D.1**   *P*   **121**   *L*   **25**   **#** 182

Karam, Roger   CISCO

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

concern that the 100khz stop freq may not cover the latest converters
running at higher frequencies.

SuggestedRemedy

revisit this freq in light of the new technologies and adjust if needed.

Proposed Response   *Response Status*   **C**

REJECT.

The frequency band applies to the feedback loop and not the switching frequency. Annex
33D covers modern switching power supplies.

Cl **33D**   *SC* **d.2**   *P*   **123**   *L*   **30**   **#** 178

Karam, Roger   CISCO

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

great work done by Yair on this.
but it would be better if we clarify the overall picture some more.
for someone picking this up, reading it, a lot is left to be explained.
ie why 2.7ohm total R for the EMI filter. also we never mention phase,
is it because we are forcing the magnitude to be far away from that of the PSE... we know
the PD's real input may not be accessible here...

SuggestedRemedy

Please state that the goal is that The Impedance of the lumped Cable+PD
(PD being RJ45+ all circuitry till the converter) must never
be equal and opposite in phase to that of the PSE which could cause oscillations. and that
our spec will insure that if both the PSE and the PD
specs are followed properly this would not be the case.

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

Commentors concerns are addressed by the resolution of comment #15.

Cl **33D**   *SC*   *P*   **124**   *L*   **1**   **#** 220

Hinrichs, Henry   Pulse Inc.

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

If the working group is serious about setting the cabling tolerance at 3%, there has to be an
annex explaining what impact this has on the magnetics.

SuggestedRemedy

I am including as an attachment the suggested text for this annex.

Proposed Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

Yes, 3% is the unbalance specification from ISO.

Change the current unbalance number from Table 33-5 item 15 to 10.5mA.

Include the commentor's document as Annex 33E

have Annex 33E refer to figure 33-19 and correct associated text.