

## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

**Cl 1 SC 1.4 P23 L37 # 2**  
 Maguire, Valerie Copperopolis; affl w/ CME Consulting and Cisco  
**Comment Type E Comment Status A EZ**  
 The general style for Definitions in 802.3-2022 is to reference the uppermost Clause number (no precedent for a specific subclause reference).  
**SuggestedRemedy**  
 Replace, "(see IEEE Std 802.3, 188.9)" with "(see IEEE Std 802.3, Clause 188)"  
**Response Response Status C**  
 ACCEPT.

**Cl 30 SC 30.2.5 P25 L31 # 74**  
 Brandt, David Rockwell Automation  
**Comment Type T Comment Status A Management**  
 "30.17 Layer management for Multidrop Power over Ethernet (MPoE)" does not have a table mirroring "Table 30-10 - PoDL PSE Capabilities" or reference in 30.2.5 Capabilities.  
**SuggestedRemedy**  
 Add a MPSE table mirroring Table 30-10, based on "30.17.1.1 MPSE attributes". Extend reference in 30.2.5 to include MPoE PSE and PD references. Include new box oMPSE in "Figure 30-3—DTE System entity relationship diagram". Include oMPSE in "30.2.2.1 Text description of managed objects"  
**Response Response Status C**  
 ACCEPT IN PRINCIPLE.  
 Accommodated by comment #64.  
 Implement text changes shown in pages 6 to 15 (section 3) in jones\_3da\_01\_mpoe\_measurement\_proposal\_v2.3a.pdf

**Cl 30 SC 30.17 P28 L19 # 64**  
 Jones, Peter Cisco Systems  
**Comment Type TR Comment Status A Management**  
 It's been assumed the MPoE will provide the equivalent function to the "Power via MDI Measurements TLV" defined for 4 pair PoE, but we have not specified this in the draft.  
**SuggestedRemedy**  
 Implement text changes shown in pages 6 to 15 (section 3) in jones\_3da\_01\_mpoe\_measurement\_proposal\_v2.3a.pdf  
**Response Response Status C**  
 ACCEPT.

**Cl 30 SC 30.17.1.1.3 P29 L14 # 3**  
 Maguire, Valerie Copperopolis; affl w/ CME Consulting and Cisco  
**Comment Type E Comment Status A EZ**  
 A combination of things infers plurality  
**SuggestedRemedy**  
 Replace "MPD(s)" with "MPDs"  
**Response Response Status C**  
 ACCEPT.

**Cl 30 SC 30.17.1.1.3 P29 L17 # 7**  
 Maguire, Valerie Copperopolis; affl w/ CME Consulting and Cisco  
**Comment Type E Comment Status A EZ**  
 189.5.1 refers to MPD types  
**SuggestedRemedy**  
 Replace, "MPD Class(s)" with "MPD type(s)"  
**Response Response Status C**  
 ACCEPT.

**Cl 30 SC 30.17.1.1.7 P30 L3 # 27**  
 Zimmerman, George CME Consulting/ADI,APLgp,Cisco,Marvell,Onsemi,So  
**Comment Type E Comment Status A EZ**  
 typo "Capabilties" should be "Capabilities" (missing the "l" between the l and the t) this occurs 6 times.  
**SuggestedRemedy**  
 Change "Capabilties" to "Capabilities" at P30 L3, P30 L14, P30 L25, P32 L39, P32 L50, P33 L10.  
**Response Response Status C**  
 ACCEPT.

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CI 30 SC 30.17.1.1.9 P30 L23 # 25

Zimmerman, George CME Consulting/ADI,APLgp,Cisco,Marvell,Onsemi,So

Comment Type E Comment Status A Editorial

"A count of the cumulative energy" - you don't count energy.

*SuggestedRemedy*

Change "A count of the cumulative energy" to "The value of the counter represents the cumulative energy"

Response Response Status C

ACCEPT.

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CI 30 SC 30.17.1.1.10 P30 L32 # 26

Zimmerman, George CME Consulting/ADI,APLgp,Cisco,Marvell,Onsemi,So

Comment Type E Comment Status A EZ

typo - "MEASUREMENT" (not "MEASURMENT", missing the E before the M). This occurs twice.

*SuggestedRemedy*

Change MEASURMENT to MEASUREMENT at P30 L32 & P33 L17 (30.17.2.1.11)

Response Response Status C

ACCEPT.

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CI 30 SC 30.17.2 P30 L50 # 75

Brandt, David Rockwell Automation

Comment Type T Comment Status A Management

oMPD managed object class is lacking references to it.

*SuggestedRemedy*

Add a MPD table in the style of Table 30-10, based on "30.17.2 MPD managed object class attributes". Extend reference in 30.2.5 to include MPoE PD references. Include new box oMPD in "Figure 30-3—DTE System entity relationship diagram". Include oMPD in "30.2.2.1 Text description of managed objects"

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #64.

Implement text changes shown in pages 6 to 15 (section 3) in jones\_3da\_01\_mpoe\_measurement\_proposal\_v2.3a.pdf

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CI 30 SC 30.17.2.1.1 P31 L13 # 15

Maguire, Valerie Copperopolis; affl w/ CME Consulting and Cisco

Comment Type E Comment Status A Editorial

Type, by itself, is not a proper noun.

*SuggestedRemedy*

Replace "indicates the MPD Type" with "indicates the MPD type"

Response Response Status C

ACCEPT IN PRINCIPLE.

Replace "indicates the MPD Type" with "indicates the MPD type" on P31, L13

Editor to perform a global review to ensure that 'type' is not capitalized unless it's at the start of the sentence or being used as a proper noun (e.g., Type 0).

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CI 45 SC 45.2.1.235.4 P38 L5 # 6

Maguire, Valerie Copperopolis; affl w/ CME Consulting and Cisco

Comment Type T Comment Status A Management

If 10BASE-T1M PHYs always indicate a zero in bit 1.2298.8, then reference to the T1M PHY is not needed in the first two sentences.

*SuggestedRemedy*

Revert the first two sentences in 45.2.1.235.4 back to the original text (and delete all revision marks) as follows, "When read as a one, bit 1.2298.9 indicates that the 10BASE-T1S PMA has the ability to detect a fault condition on the receive path."

Response Response Status C

ACCEPT.

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Cl 45 SC 45.2.3.72.2 P40 L8 # 76

Brandt, David Rockwell Automation

Comment Type E Comment Status A Editorial

The loopback path is not stated clearly. PCS has upper and lower interfaces.

*SuggestedRemedy*

Change from: "PCS shall accept data on the transmit path and return it on the receive path",  
To: "PCS shall accept data on the transmit path from the MII and return it on the receive path  
to the MII". Otherwise add "as described in 188.4.3.9"

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: Two options are provided in the Suggested Remedy.)

Change from: "PCS shall accept data on the transmit path and return it on the receive path"

To: "PCS shall accept data on the transmit path from the MII and return it on the receive path  
to the MII".

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Cl 45 SC 45.2.3.73.2 P41 L1 # 14

Maguire, Valerie Copperopolis; affl w/ CME Consulting and Cisco

Comment Type E Comment Status A Editorial

"that" typically refers to a specific subset, while "which" is more commonly used in relative  
statements to provide extra information not essential to the meaning of the sentence.

*SuggestedRemedy*

Replace "PHYs, which do not" with "PHYs that do not" (keep text in underline)

Response Response Status C

ACCEPT IN PRINCIPLE.

Delete ", which do not have full duplex capability"

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Cl 79 SC 79 P42 L1 # 65

Jones, Peter Cisco Systems

Comment Type TR Comment Status A LLDP

It's always been assumed the MPoE will use LLDP to exchange status and negotiate power  
for MPoE, but we have not specified this in the draft.

*SuggestedRemedy*

Implement text changes shown in pages 11 to 22 (sections 4.2 and 4.3) in  
jones\_3da\_01\_ldp\_mpo\_e\_proposal\_v2.2a.pdf.  
Remove "Power Bus Management" row from Table 79-1 within text box on page 43.  
Remove text box on page 49 containing the "79.3.12 Dynamic Power Allocation TLV"

Response Response Status C

ACCEPT IN PRINCIPLE.

Globally change state name of PON\_NO\_POWER to "PON\_OUT\_OF\_RANGE" (found in cl  
189. Figure 189-8).

Implement text changes shown in pages 11 to 22 (sections 4.2 and 4.3) in  
jones\_3da\_01\_ldp\_mpo\_e\_proposal\_v2.2a.pdf.  
Remove "Power Bus Management" row from Table 79-1 within text box on page 43.  
Remove text box on page 49 containing the "79.3.12 Dynamic Power Allocation TLV"

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**CI 79**      **SC 79.1**                      **P42**                      **L28**                      # **17**

Regev, Alon                                      Keysight

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

While I agree that using the "Nearest bridge" group MAC address group is appropriate, I disagree with making this change just for 10BASE-T1S and 10BASE-T1M

A maintenance request should be filed to

1) change the reference from 802.1AB-2009 to 802.1AB-2016 (as 802.1AS-2009 was

superceded by 802.1AB-2016)

2) require all 802.3 LLDP messages use the "Nearest bridge" group MAC addresses as they are not intended to cross bridges (for example, frame preemption capability needs to be negotiated between both partners in a link and cannot pass through ANY bridge).

**SuggestedRemedy**

Remove the change to 79.1.1.1

**Response**                                      **Response Status**    **W**

ACCEPT IN PRINCIPLE.

(Editor's note: This change has not yet been made to 79.1.1.1 - see note on P42, L 15, "Unapproved text related to this has been placed in text boxes." Comment #65 replaces the Editor's notes while referencing 802.1AB-2016 and removing the specificity to 10BASE-T1S and 10BASE-T1M.)

Accommodated by comment #65.

Implement text changes shown in pages 11 to 22 (sections 4.2 and 4.3) in

jones\_3da\_01\_lldp\_mpoe\_proposal\_v2.2a.pdf.

Remove "Power Bus Management" row from Table 79-1 within text box on page 43.

Remove text box on page 49 containing the "79.3.12 Dynamic Power Allocation TLV"

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**CI 79**      **SC 79.1.1.1**                      **P42**                      **L23**                      # **47**

Jones, Peter                                      Cisco Systems

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

Define LLDP Destination Address field for 10BASE-T1S/M.

**SuggestedRemedy**

Make the change to 79.1.1.1 as shown in lines 23-31

**Response**                                      **Response Status**    **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

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**CI 79**      **SC 79.3**                                      **P43**                      **L3**                      # **8**

Maguire, Valerie                                      Copperopolis; affl w/ CME Consulting and Cisco

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

The last row in Table 79-1 that's being revised was for "9 to 255"

**SuggestedRemedy**

Change Editing Instruction from, "Change the row for subtypes 10 to 255" to "Change the row for subtypes 9 to 255"

**Response**                                      **Response Status**    **C**

ACCEPT.

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**CI 79**      **SC 79.3**                                      **P43**                      **L8**                      # **18**

Regev, Alon                                      Keysight

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

There seem to be two sets of editing instrucionts, one that adds subtype 9 and changes the "Reserved" row and a secon that adds rows 9-12 and updates the "Reserved" field. If both editing insturctions are followed then we will end up with 2 rows for subtype 9.

**SuggestedRemedy**

remove the first set of editing instructions, but leave the second

**Response**                                      **Response Status**    **C**

REJECT.

There are two instructions (one change and one insert) for the table as follows:

- 1) The numbering for the reserved row needs to be changed (comment #12 corrects the instruction - it should read, "Change the row for subtypes 9 to 255 in Table 79-1") , and
- 2) a new subtype row (9) for the PLCA TLV) needs to be inserted

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CI 79 SC 79.3.9.1 P44 L26 # 81

Baggett, Tim Microchip

Comment Type T Comment Status A PLCA

Add PLCA TLVs for the following:

- \* PLCA Node Count
- \* D-PLCA Coordinator Role Allowed

#### SuggestedRemedy

For D-PLCA Coordinator Role Allowed, add the following field definition to the PLCA Support/Status Field of Table 79-21 (P44 L42):

- \* Field definitions: Bit 5 - D-PLCA Coordinator Role Allowed
- \* Value/Values: 1 = TRUE, 0 = FALSE
- \* Notes: 30.16.1.1.10

Adjust the reserved field bits for the PLCA Support/Status Field of Table 79-21 (P44 L43):

- \* Field Definitions: Change "Bits 5 to 15" to "Bits 6 to 15"

For PLCA Node Count, add to table 79-21 a new entry (P44 L46):

- \* Field: PLCA nodeCount
- \* Length (octets): 1
- \* Format: Unsigned Integer
- \* Field definitions: 0-255
- \* Value/Values: 0-255
- \* Notes: 30.16.1.1.3

Add new section "79.3.9.2 PLCA nodeCount" P45 L5 with the following text:

The PLCA nodeCount field contains an unsigned integer value indicating the number of transmit opportunities between beacons transmitted by the coordinator. If PLCA is not enabled, this field reports 0. If the coordinator mode is not enabled and the PLCA nodeID is zero, this field may report 0 or the number of transmit opportunities the follower detects between received beacons.

Response Response Status C

ACCEPT IN PRINCIPLE.

For D-PLCA Coordinator Role Allowed, add the following field definition to the PLCA Support/Status Field of Table 79-21 (P44 L42):

- \* Field definitions: Bit 5 - D-PLCA Coordinator Role Allowed
- \* Value/Values: 1 = TRUE, 0 = FALSE
- \* Notes: 30.16.1.1.10

Adjust the reserved field bits for the PLCA Support/Status Field of Table 79-21 (P44 L43):

- \* Field Definitions: Change "Bits 5 to 15" to "Bits 6 to 15"

For PLCA Node Count, add to table 79-21 a new entry (P44 L46):

- \* Field: PLCA nodeCount
- \* Length (octets): 1
- \* Format: Unsigned Integer
- \* Field definitions: 0-255
- \* Value/Values: 1-255
- \* Notes: 148.4.4.2 variable plca\_node\_count

Add new section after 79.3.9.2, "79.3.9.3 PLCA nodeCount" (and renumber subsequent sections) at P45 L5 with the following text:

The PLCA nodeCount field contains an unsigned integer value indicating the number of transmit opportunities between beacons transmitted by the coordinator. This field reports 0 unless the station is a PLCA coordinator and PLCA is enabled.

CI 79 SC 79.3.9.3 P45 L8 # 48

Jones, Peter Cisco Systems

Comment Type T Comment Status A LLDP

Delete un-needed text. The LLDP DA is now defined in 79.1.1.1.

#### SuggestedRemedy

Delete "Since this TLV is intended to inform a link partner of capabilities, the PLCA TLV should be sent in an LLDPDU addressed to the Nearest Bridge group address (see IEEE 802.1Q)."

Response Response Status C

ACCEPT.

CI 147 SC 147.1 P53 L10 # 111

Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type T Comment Status A 10BASE-T1S

The change to "provided" would make the current definitions for multidrop within clause 147 obsolete. Additionally, current implementations of 10BASE-T1S multidrop, which are already out in the field might not be compliant anymore.

#### SuggestedRemedy

change provided to "enhanced"

Response Response Status C

ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general

COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn

SORT ORDER: Clause, Subclause, page, line

CI 147  
SC 147.1

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Cl 148 SC 148.4.4 P58 L24 # 36

Zimmerman, George CME Consulting/ADI,APLgp,Cisco,Marvell,Onsemi,So

Comment Type T Comment Status R PLCA

The left hand exit arc from COMMIT to itself cannot ever be true. When the PLCA Control diagram enters COMMIT, committed gets set to true, and the PLCA Data state diagram exits the HOLD state to tag "B". This sets packetPending to FALSE, making the arc impossible. The assertion of COL will drop TXEN causing the right hand branch to be taken to ABORT.

*SuggestedRemedy*

Delete the left hand recirculating branch on COMMIT.

Response Response Status C

REJECT.

This comment was WITHDRAWN by the commenter.

A collision may send you to the PLCA Data state diagram, part b, Figure 148-6 through the COLLIDE, DELAY\_PENDING, PENDING, and WAIT\_MAC states before TX\_EN is set to TRUE in the TRANSMIT state. COL is sent from the PHY independently. Packetpending is set to TRUE in the PENDING state after the pending\_timer delay. This may cause the left hand exit arc from the COMMIT state to be true.

Cl 148 SC 148.4.4.1 P54 L28 # 28

Zimmerman, George CME Consulting/ADI,APLgp,Cisco,Marvell,Onsemi,So

Comment Type E Comment Status A Editorial

"The PLCA node should be configured appropriately before transmit functions are enabled to achieve error free operation when D-PLCA is not enabled." reads odd. The condition usually goes first.

*SuggestedRemedy*

Change "The PLCA node should be configured appropriately before transmit functions are enabled to achieve error free operation when D-PLCA is not enabled." to "When D-PLCA is not enabled, the PLCA node should be configured appropriately before transmit functions are enabled."

Response Response Status C

ACCEPT.

Cl 148 SC 148.4.4.2 P55 L9 # 20

Regev, Alon Keysight

Comment Type T Comment Status A Editorial

three state machines seem to have slightly different definitions for COL and CRS. It would be good to harmonize these as they refer to the same signals.

Current data in 148.4.4.2:

COL

The MII signal COL.

Values: TRUE or FALSE

CRS

The MII signal CRS.

Values: TRUE or FALSE

RX\_DV

The MII signal RX\_DV.

Values: TRUE or FALSE

TX\_EN

The MII signal TX\_EN.

Values: TRUE or FALSE

Current data in 148.4.5.2:

COL

The MII signal COL specified in 22.2.2.12.

CRS

The MII signal CRS (see 22.2.2.11).

TXD□

The MII signals TXD<3:0> specified in 22.2.2.4.

TX\_EN

The MII signal TX\_EN specified in 22.2.2.3.

TX\_ER

The MII signal TX\_ER specified in 22.2.2.5.

Current data in 148.4.7.2;

COL

The MII signal COL.

Values: TRUE or FALSE

COR

The MII signal COR.

Values: TRUE or FALSE

*SuggestedRemedy*

change all 3 locations (148.4.4.2, 148.4.5.2, and 148.4.7.2) to the following definitions (only populate these where used):

COL

The MII signal COL (see 22.2.2.12).

Values: TRUE or FALSE

CRS□

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general

COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn

SORT ORDER: Clause, Subclause, page, line

Cl 148

SC 148.4.4.2

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The MII signal CRS (see 22.2.2.11).

Values: TRUE or FALSE

RX\_DV

The MII signal RX\_DV.

Values: TRUE or FALSE

TXD

The MII signals TXD<3:0> (see 22.2.2.4).

TX\_EN

The MII signal TX\_EN.(see 22.2.2.3)

Values: TRUE or FALSE

TX\_ER

The MII signal TX\_ER (see 22.2.2.5)

Values: TRUE or FALSE

Response Response Status **C**

ACCEPT IN PRINCIPLE.

(Editor's note: There are some extraenous marks following CRS and TXD in the Suggested Remedy that don't belong.)

Align the definitions in 148.4.4.2, 148.4.5.2, and 148.4.7.2 with the following (only populate these where used):

COL

The MII signal COL (see 22.2.2.12).

Values: TRUE or FALSE

CRS

The MII signal CRS (see 22.2.2.11).

Values: TRUE or FALSE

RX\_DV

The MII signal RX\_DV.

Values: TRUE or FALSE

TXD

The MII signals TXD<3:0> (see 22.2.2.4).

TX\_EN

The MII signal TX\_EN.(see 22.2.2.3)

Values: TRUE or FALSE

TX\_ER

The MII signal TX\_ER (see 22.2.2.5)

Values: TRUE or FALSE

Cl **148** SC **148.4.4.2** P**55** L**22** # **83**

McClellan, Brett

Marvell

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

per remedy of comment 323 on D2.0, dplca\_en should have values defined as follows:

Values:

TRUE: The D-PLCA function is enabled

FALSE: The D-PLCA function is disabled or not present

SuggestedRemedy

Change "Values: TRUE or FALSE" to

"Values:

TRUE: The D-PLCA function is enabled

FALSE: The D-PLCA function is disabled or not present"

Response Response Status **C**

ACCEPT.

Cl **148** SC **148.4.4.6** P**56** L**6** # **82**

McClellan, Brett

Marvell

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

typo change 'TRASNSMIT' to 'TRANSMIT'

SuggestedRemedy

change 'TRASNSMIT' to 'TRANSMIT'

Response Response Status **C**

ACCEPT.

Cl **148** SC **148.4.4.6** P**56** L**6** # **29**

Zimmerman, George

CME Consulting/ADI,APLgp,Cisco,Marvell,Onsemi,So

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

typo "TRASNSMIT"

SuggestedRemedy

change "TRASNSMIT" to "TRANSMIT"

Response Response Status **C**

ACCEPT IN PRINCIPLE.

Accommodated by comment #82.

change 'TRASNSMIT' to 'TRANSMIT'

## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

CI 148 SC 148.4.4.6 P58 L35 # 68

Slavick, Jeff Broadcom

Comment Type TR Comment Status R PLCA

In the BURST state there is no "stop\_append\_commit\_timer" So if you re-enter BURST state won't the append\_commit\_timer\_done be true? Which means you'd enter ABORT instead of waiting out the burst\_timer if you have max\_bc > 0.

#### SuggestedRemedy

Add "stop\_append\_commit\_timer" before the IF statement in BURST state of Figure 148-4, part b

Response Response Status W

REJECT.

The suggesting re-entry doesn't happen after append\_commit\_timer is started. Looping occurs if BURST exits to "F", going to TRANSMIT, which then comes back to BURST, which only happens when max\_bc > 0. (in this case BURST/TRANSMIT loop until either the burst count (bc) is >= max\_bc, in which case it moves on, to the next TO, or the burst\_timer is complete and TX\_EN has dropped. append\_commit\_timer isn't started in this loop. append\_commit\_timer is only started when max\_bc is = 0, and in this case, burst\_timer is not started, so BURST waits until append\_commit\_timer is done before exiting to ABORT. Note that max\_bc is not changed in the state diagram (it maps to a management attribute - and if these are changed, then it is likely plca needs a reset).

CI 148 SC 148.4.4.6 P58 L50 # 66

Slavick, Jeff Broadcom

Comment Type T Comment Status A EZ

The exit transition from NEXT\_TX\_OPPORTUNITY to hop G appears to begin with a "local\_nodeID != 0) where there is a space between the ! and the = is trying to be a not equal check, but you use the crossed through = sign for the compare to 255.

#### SuggestedRemedy

Change the != to a crossed through equal sign

Response Response Status C

ACCEPT.

CI 148 SC 148.4.4.6 P58 L50 # 67

Slavick, Jeff Broadcom

Comment Type TR Comment Status R Editorial

The exit transitions from NEXT\_TX\_OPPORTUNITY to B does a greater than or equal to compare to plca\_node\_count and it looks like the exit to G does a less than or equal to comparison. If so then which branch are you supposed to take if curlD is equal to plca\_node\_count.

#### SuggestedRemedy

Change the transition to G to be just a less than compare to plca\_node\_count.

Response Response Status W

REJECT.

No change to draft. The Commenter appears to have misread the use of < and underline (to indicate inserted text) as a less than or equal to sign on the exit condition to branch G.

CI 148 SC 148.4.7.1 P62 L15 # 49

Jones, Peter Cisco Systems

Comment Type E Comment Status A Editorial

Improve text clarity

#### SuggestedRemedy

Change  
"When using D-PLCA with statically assigned IDs, values in the range of 0 to 7 should be use first."  
to  
"When using D-PLCA with statically assigned IDs, values in the range of 0 to 7 should be assigned first."

Response Response Status C

ACCEPT.

CI 148 SC 148.4.7.1 P62 L16 # 101

Law, David HPE

Comment Type E Comment Status A EZ

Suggest that '... as part of the nodeID assignment ...' should read '... as part of the local\_nodeID assignment ...' to match the references to local\_nodeID in the first sentence of this paragraph.

#### SuggestedRemedy

See comment

Response Response Status C

ACCEPT.



## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

CI 148 SC 148.4.7.1 P62 L26 # 50  
 Jones, Peter Cisco Systems  
 Comment Type E Comment Status A EZ  
 Align text with state diagram terminology  
 SuggestedRemedy  
 Replace "switches" with "transitions"  
 Response Response Status C  
 ACCEPT.

CI 148 SC 148.4.7.1 P62 L28 # 51  
 Jones, Peter Cisco Systems  
 Comment Type E Comment Status A EZ  
 Align text with state diagram terminology  
 SuggestedRemedy  
 Replace "switching " with "transitioning"  
 Response Response Status C  
 ACCEPT.

CI 148 SC 148.4.7.1 P62 L34 # 52  
 Jones, Peter Cisco Systems  
 Comment Type E Comment Status A EZ  
 Align text with state diagram terminology  
 SuggestedRemedy  
 Replace "will switch" with "transitions"  
 Response Response Status C  
 ACCEPT.

CI 148 SC 148.4.7.1 P62 L37 # 9  
 Maguire, Valerie Copperopolis; affl w/ CME Consulting and Cisco  
 Comment Type E Comment Status A EZ  
 Shrinks is more commonly associated with making something physically smaller as opposed to reducing the number of things  
 SuggestedRemedy  
 Replace " also shrinks" with "also reduces"  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.

(Editor's note: The Suggested Remedy includes a space before "shrinks" that should not be removed.)

Replace "also shrinks" with "also reduces"

CI 148 SC 148.4.7.1 P62 L39 # 53  
 Jones, Peter Cisco Systems  
 Comment Type E Comment Status A EZ  
 Align text with state diagram terminology  
 SuggestedRemedy  
 Replace "will switch" with "transitions"  
 Response Response Status C  
 ACCEPT.

CI 148 SC 148.4.7.1 P62 L48 # 54  
 Jones, Peter Cisco Systems  
 Comment Type E Comment Status A EZ  
 Align text with state diagram terminology  
 SuggestedRemedy  
 Replace "switch" with " transition"  
 Response Response Status C  
 ACCEPT.

## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

Cl 148 SC 148.4.7.1 P63 L1 # 55  
Jones, Peter Cisco Systems  
Comment Type E Comment Status A EZ  
Align text with state diagram terminology  
SuggestedRemedy  
Replace "will switch" with "transition"  
Response Response Status C  
ACCEPT.

Cl 148 SC 148.4.7.1 P63 L1 # 10  
Maguire, Valerie Copperopolis; affl w/ CME Consulting and Cisco  
Comment Type E Comment Status A Editorial  
The phrase "at any time" is not needed here.  
SuggestedRemedy  
Replace "If at any time BEACONS cease to be regularly" with "If BEACONS cease to be regularly"  
Response Response Status C  
ACCEPT.

Cl 148 SC 148.4.7.2 P63 L14 # 30  
Zimmerman, George CME Consulting/ADI,APLgp,Cisco,Marvell,Onsemi,So  
Comment Type E Comment Status A EZ  
typo - "COR" should be "CRS". (2 instances)  
SuggestedRemedy  
change "COR" and "The MII signal COR." to "CRS" and "The MII signal CRS."  
Response Response Status C  
ACCEPT IN PRINCIPLE.  
Accommodated by comment #19.  
change "COR" to "CRS" on page 63 lines 15 and 16

Cl 148 SC 148.4.7.2 P63 L15 # 19  
Regev, Alon Keysight  
Comment Type T Comment Status A EZ  
COR should be CRS (2 locations)  
SuggestedRemedy  
change "COR" to "CRS" on page 63 lines 15 and 16  
Response Response Status C  
ACCEPT.

Cl 148 SC 148.4.7.2 P63 L15 # 102  
Law, David HPE  
Comment Type T Comment Status A EZ  
A variable 'COR' is defined as the 'The MII signal COR.'. This should be 'CRS'.  
SuggestedRemedy  
Change the two instances of 'COR' to 'CRS'.  
Response Response Status C  
ACCEPT IN PRINCIPLE.  
Accommodated by comment #19.  
change "COR" to "CRS" on page 63 lines 15 and 16

## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

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Cl 148 SC 148.4.7.3 P65 L20 # 56

Jones, Peter Cisco Systems

Comment Type E Comment Status A Editorial

Improve text clarity

*SuggestedRemedy*

Change

it shall not return an ID greater than the highest HARD claimed in the table, unless there is no ID available less than the highest HARD claimed in the table. If there is no ID available less than the highest HARD claimed in the table, the function will return the next TO immediately following the highest HARD claimed TO in the table.

to

It returns an available ID less than the highest HARD claimed ID if possible. If not, it returns the next ID after the highest HARD claimed ID.

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: 'It' should not be capitalized as it appears at the start of a lettered list.)

Replace, "it shall not return an ID greater than the highest HARD claimed in the table, unless there is no ID available less than the highest HARD claimed in the table. If there is no ID available less than the highest HARD claimed in the table, the function will return the next TO immediately following the highest HARD claimed TO in the table.

With, "it returns an available ID less than the highest HARD claimed ID if possible. If there is no available ID less than the highest HARD claimed ID, it returns the next ID after the highest HARD claimed ID.

---

Cl 148 SC 148.4.7.3 P65 L22 # 103

Law, David HPE

Comment Type T Comment Status A EZ

The second sentence of the first paragraph of the PICK\_FREE\_TXOP function description says, 'It returns any ID that ...'. Item (b) of the description then starts, 'it shall not return an ID greater ...'. The last sentence, however, says, '... the function will return the next TO immediately following the highest HARD claimed TO in the table ...'.

*SuggestedRemedy*

Change the two instances of 'TO' to 'ID'.

Response Response Status C

ACCEPT.

---

Cl 148 SC 148.4.7.3 P66 L14 # 104

Law, David HPE

Comment Type T Comment Status A D-PLCA

The description of the PICK\_FREE\_TXOP function says that 'It returns any ID that is not marked as HARD or SOFT claimed in the table ...'. It, however, does not define what should happen when no IDs are free (i.e., all are marked as either HARD or SOFT).

*SuggestedRemedy*

Suggest that an item (c) is added to the exceptions list that reads:

c. it shall return 255 if all IDs in the table are marked HARD or SOFT).

Response Response Status C

ACCEPT IN PRINCIPLE.

(eliminate closing parenthesis from commenter's resolution)

On P65 L24

item (c) is added to the exceptions list that reads:

c. it shall return 255 if all IDs in the table are marked HARD or SOFT

## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

CI 148 SC 148.4.7.5 P66 L24 # 105

Law, David

HPE

Comment Type TR Comment Status R D-PLCA

On review of the PHY delay constraints defined in table 188-4 '10BASE-T1M delay constraints', it appears the CRS signal resulting from a looped back BEACON can be de-asserted before the associated RX\_ER and RXD BEACON encoding, see loopback\_230225.jpg. Worse case, the maximum time to the RX\_ER and RXD BEACON encoding appears to be TX\_CLK cycle time + TX\_ER sampled to TCI output + TCI input to RX\_ER asserted = 400 + 440 + 4000 = 4840 ns. In the best case, the maximum time to CRS de-assertion appears to be TX\_CLK cycle time + TX\_ER sampled to TCI output + beacon\_timer + TCI input to CRS de-asserted = 400 + 440 + 2050 + 1120 = 4010 ns; however, it could be shorter. Either way, this is less than the worst-case maximum time to the RX\_ER and RXD BEACON encoding. As a result, the Figure 148-8 'D-PLCA Control State Diagram' will exit the LOOPBACK state due to the reassertion of the CRS signal and then will consider the subsequent associated RX\_ER and RXD BEACON encoding as a separate BEACON. This defeats the purpose of the LOOPBACK state; see comment #333 on IEEE P802.3da draft D2.0.

To address the above, a timer would need to be started on entry to the LOOPBACK state, which expires shortly after the maximum time to RX\_ER and RXD BEACON encoding. The LOOPBACK state should not be exited until this timer has expired.

#### SuggestedRemedy

[1] Add a new timer to subclause 148.4.7.4 'Timers' as follows:

loopback\_timer

Represents the maximum time for a BAECON to loop back on the MII received path.

Duration: 4250 ns.

Tolerance: ± 250 ns.

[2] In the figure 148-8 'D-PLCA Control State Diagram':

[a] Add the action 'start loopback\_timer' to the LOOPBACK state.

[b] Change the exit condition from the LOOPBACK state to read 'loopback\_timer\_done \* (rx\_cmd != BEACON) \* !CRS \* !COL'.

Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

CI 148 SC 148.4.7.5 P66 L45 # 106

Law, David

HPE

Comment Type TR Comment Status A D-PLCA

I noted the MAC ExcessDefer counter being incremented when a node is added.

Since the node being added is receiving BEACONS, the PLCA Control state diagram will enter the SYNCING state, setting plca\_active to TRUE. This causes the PLCA Status state diagram to enter the ACTIVE state, setting plca\_status to OK. As a result, the PLCA DATA state diagram will exit the NORMAL state, where it defaults to CSMA/CD operation, and start PLCA operation.

The D-PLCA Control State Diagram (Figure 148-8) on the node being added, however, cannot exit the LEARNING state and enter the FOLLOWER state until dplca\_new\_age is true (among other conditions). The local\_nodeID variable is set to 255 in the WAIT\_BEACON and LEARNING state, which inhibits transmission and is only set to a value other than 255, which will permit transmission on entry to the FOLLOWER state.

The dplca\_new\_age variable, however, will only be set true once long\_cnt, which is incremented on each BEACON, equals hard\_aging\_cycles in the TXOP\_END state in the D-PLCA Aging State Diagram (Figure 148-9). As a result, the node being added will not be able to transmit until the number of BEACONS it has received equals hard\_aging\_cycles. This is a reasonably short time in the absence of other transmissions, but if there are other nodes transmitting during the Transmit Opportunities between these BEACONS, it can be quite a bit longer. It is this delay that causes the ExcessDefer error counter to increment.

I've captured this in the two traces. All nodes are configured to support D-PLCA, with node 0 configured with coordinator\_role\_allowed set true. Nodes 0, 2 and 3 are enabled at time 0. Node 1 is enabled at 15 ms, and the first Node 1 packet transmission request is at 16 ms. In the first trace (excess\_defer\_1\_220225.jpg), there are no transmissions on the segment from nodes 0, 2 or 3. As a result, a node ID is allocated to node 1 shortly after it is enabled. The node 1 packet transmission request at 16 ms (the dte\_node\_1.MAC.MA\_DATA\_request.MA\_DATA\_request event) is, therefore, serviced immediately.

In the second trace (excess\_defer\_2\_230225.jpg), a burst of 40 maximum-length packets starts being transmitted by node 2 at 8 ms, meaning that node 1 is enabled in the middle of these transmissions. Since dplca\_new\_age will not become true in node 1 until the number of BEACONS it has received equals HARD\_AGING\_CYCLES (long\_cnt = hard\_aging\_cycles), and since the node 2 transmissions increase the time between BEACONS, a node ID is not allocated to node 1 until about 36 ms. Only then can the node 1 packet transmission request at 16 ms be serviced. This is well in excess of the normal maximum deferral time. Hence, the node 1 MAC ExcessDefer error counter is incremented.

The above traces are with hard\_aging\_cycles = 25; however, the default value of hard\_aging\_cycles added in draft D1.4 is 1000. Worse case, neglecting the inter-packet gap and beacon duration, it appears the delay could be in excess of:

Max size packet transmit time x number of nodes x value of HARD\_AGING\_CYCLES

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general

COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn

SORT ORDER: Clause, Subclause, page, line

CI 148

SC 148.4.7.5

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## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

Using the example of 1500 bytes packets, 4 nodes, and hard\_aging\_cycles set to the suggested default of 1000 yields:

$$1500 \times 8 \times 100 \text{ ns} \times 4 \times 1000 = 4.8 \text{ seconds}$$

The above assumes that the 4 nodes on the network are continuously transmitting maximum-size packets for 4.8 seconds, which may not be realistic but shows how long the delay can be before a new node can transmit on a busy segment.

*SuggestedRemedy*

On review of the contribution 'Dynamic PLCA Node ID Assignment' dated 4 November 2020, I see slide 18 'Mixing "cg" and "da" nodes' <[https://www.ieee802.org/3/da/public/110420/beruto\\_3da\\_01\\_110420.pdf#page=18](https://www.ieee802.org/3/da/public/110420/beruto_3da_01_110420.pdf#page=18)> says 'In this case, the D-PLCA node won't be able to achieve enumeration and will keep working in plain CSMA/CD mode creating random collisions.'. This seems to imply that the intent may have been for a D-PLCA node to operate in CSMA/CD mode until it is allocated a nodeID. If this is correct, the state diagrams should be updated to support CSMA/CD operations while local\_nodeID = 255.

*Response* *Response Status* **C**

ACCEPT IN PRINCIPLE.

Change the exit condition from NORMAL to IDLE in the PLCA Data state diagram, part a from  
 plca\_en \* (!plca\_reset) \* (!CRS) \* (plca\_status = OK)  
 to  
 plca\_en \* (!plca\_reset) \* (!CRS) \* (plca\_status = OK) \* (local\_nodeID != 255)

where "!=" is the not equals sign.

*Cl* **148** *SC* **148.4.7.5** *P* **66** *L* **49** *#* **69**

Slavick, Jeff Broadcom

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

The SOFT\_CLAIMING has an extra indent in the FOLLOWER re-entry branch of Figure 148-1

*SuggestedRemedy*

Align HARD and SOFT CLAIMING text

*Response* *Response Status* **C**

ACCEPT.

*Cl* **148** *SC* **148.4.7.6** *P* **67** *L* **18** *#* **80**

Baggett, Tim Microchip

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

The logic in the TXOP\_END state is incorrectly indented making readability difficult.

*SuggestedRemedy*

Change text in TXOP\_END state to:

```
IF dplca_txop_id = 0 THEN
  IF short_cnt = soft_aging_cycles THEN
    CLEAR_SOFT_CLAIMS(txop_claim_table)
    CLEAR_SOFT_CLAIMS(txop_claim_table_new)
    short_cnt <= 0
  ELSE
    short_cnt <= short_cnt + 1
  END
END

IF long_cnt = hard_aging_cycles THEN
  txop_claim_table <= txop_claim_table_new
  CLEAR_TXOP_TABLE(txop_claim_table_new)
  dplca_new_age <= TRUE
  long_cnt <= 0
ELSE
  long_cnt <= long_cnt + 1
END
END
```

*Response* *Response Status* **C**

ACCEPT.

## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

CI 148 SC 148.4.7.6 P67 L19 # 21

Regev, Alon Keysight

Comment Type E Comment Status A Editorial

The multi-level IF-THEN-ELSE-END statement in the TXOP\_STATE does not have consistent indentation, making it confusing to read

## SuggestedRemedy

```
change
"
IF dplca_txop_id = 0 THEN
  IF short_cnt = soft_aging_cycles THEN
    CLEAR_SOFT_CLAIMS(txop_claim_table)
    CLEAR_SOFT_CLAIMS(txop_claim_table_new)
    short_cnt <= 0
  ELSE
    short_cnt <= short_cnt + 1
  END
  IF long_cnt = hard_aging_cycles THEN
    txop_claim_table <= txop_claim_table_new
    CLEAR_TXOP_TABLE(txop_claim_table_new)
    dplca_new_age <= TRUE
    long_cnt <= 0
  ELSE
    long_cnt <= long_cnt + 1
  END
END
END"
```

```
to
"
IF dplca_txop_id = 0 THEN
  IF short_cnt = soft_aging_cycles THEN
    CLEAR_SOFT_CLAIMS(txop_claim_table)
    CLEAR_SOFT_CLAIMS(txop_claim_table_new)
    short_cnt <= 0
  ELSE
    short_cnt <= short_cnt + 1
  END

  IF long_cnt = hard_aging_cycles THEN
    txop_claim_table <= txop_claim_table_new
    CLEAR_TXOP_TABLE(txop_claim_table_new)
    dplca_new_age <= TRUE
    long_cnt <= 0
  ELSE
    long_cnt <= long_cnt + 1
  END
END
END"
```

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #80.

Change text in TXOP\_END state to:

```
IF dplca_txop_id = 0 THEN
  IF short_cnt = soft_aging_cycles THEN
    CLEAR_SOFT_CLAIMS(txop_claim_table)
    CLEAR_SOFT_CLAIMS(txop_claim_table_new)
    short_cnt <= 0
  ELSE
    short_cnt <= short_cnt + 1
  END

  IF long_cnt = hard_aging_cycles THEN
    txop_claim_table <= txop_claim_table_new
    CLEAR_TXOP_TABLE(txop_claim_table_new)
    dplca_new_age <= TRUE
    long_cnt <= 0
  ELSE
    long_cnt <= long_cnt + 1
  END
END
```

CI 148 SC 148.4.7.16 P63 L3 # 79

Baggett, Tim Microchip

Comment Type ER Comment Status A D-PLCA

D-PLCA Aging stage diagram descriptive text is missing.

## SuggestedRemedy

Receive proposed descriptive text from Tim for inclusion at end of section 148.4.7.1 or as a new section before 148.4.7.6 on P67 L1.

Response Response Status C

ACCEPT IN PRINCIPLE.

Insert 2 new sentences before the last sentence of the 3rd paragraph of 148.4.7.1 , (P62 L22) [after "...in different situations." and before "The value of.."]

Soft claims are removed from the claim table, txop\_claim\_table, if they are older than soft\_aging\_cycles. Similarly, stale hard claims are removed every hard\_aging\_cycles.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general

COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn

SORT ORDER: Clause, Subclause, page, line

CI 148  
SC 148.4.7.16

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## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

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CI 188 SC 188.1.1 P71 L18 # 107

Law, David HPE

Comment Type T Comment Status A EZ

A medium 'box' with a vertical left end usually signifies the end of the point-to-point media at the MDI. A shared media is signified by a vertical zig-zag at both ends (see IEEE std 802.3-2022 Figure 1–1).

SuggestedRemedy

Change the medium 'box' vertical left end to be a vertical zig-zag.

Response Response Status C

ACCEPT.

---

CI 188 SC 188.1.2 P71 L31 # 112

Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type T Comment Status A EZ

Text passage contains the word "MDI" several times.

SuggestedRemedy

Change "MDI" to "TCI"

Response Response Status C

ACCEPT.

---

CI 188 SC 188.2 P72 L10 # 108

Law, David HPE

Comment Type E Comment Status A EZ

Suggest that '... PHY supports only shared media ...' should read '... PHY only supports shared media ...'.

SuggestedRemedy

See comment

Response Response Status C

ACCEPT.

---

CI 188 SC 188.2 P72 L16 # 109

Law, David HPE

Comment Type E Comment Status A Editorial

Suggest that 'Larger PHY count and reach can ...' should read 'Larger PHY count and longer reach can ...'.

SuggestedRemedy

See comment

Response Response Status C

ACCEPT.

## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

CI 188 SC 188.4.2.2 P77 L36 # 22

Regev, Alon

Keysight

Comment Type T Comment Status A Editorial

The definition of TX\_ER is somewhat outdated. TX\_ER does not necessarily indicate an errored transmission (errors are indicated if BOTH TX\_EN and TX\_ER are asserted), but rather it is also used (typically more commonly) for COMMIT, BEACON, and LPI indications

*SuggestedRemedy*

change

"TX\_ER"

The TX\_ER signal of the MII as specified in 22.2.2.5.  
When set to FALSE it indicates a non-errored transmission.  
When set to TRUE it indicates an errored transmission.  
Values: TRUE or FALSE"

to:

"TX\_ER"

The TX\_ER signal of the MII as specified in 22.2.2.5 and 22.2.2.4.  
When set to TRUE it indicates an errored transmission (if TX\_EN is TRUE) or a special indication (if TX\_EN is FALSE)  
When set to FALSE it indicates a non-errored transmission and no special incation  
Values: TRUE or FALSE"

alternatively, remove these details from TX\_ER (and TX\_EN) and refer to clause 22.2.2.4 and 22.2.2.5 which define the behavior.

Note that even though 22.2.2.4 definex TX\_EN, I think that TX\_ER should also reference this clause as all the indications using combinations of TX\_ER and TX\_EN is in section 22.2.2.4 and not 22.2.2.5.

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: Two Suggested Remedies are proposed. Editors recommend removing the details and refering to 22.2.2.4 and 22.2.2.5 to avoid redefining this signal inadvertently.)

Replace,  
"TX\_EN  
The TX\_EN signal of the MII as specified in 22.2.2.3.  
When set to FALSE transmission is disabled.  
When set to TRUE transmission is enabled.  
Values: TRUE or FALSE

TX\_ER  
The TX\_ER signal of the MII as specified in 22.2.2.5.  
When set to FALSE it indicates a non-errored transmission.  
When set to TRUE it indicates an errored transmission.  
Values: TRUE or FALSE"

with,

"TX\_EN

The TX\_EN signal of the MII as specified in 22.2.2.3.

TX\_ER

The TX\_ER signal of the MII as specified in 22.2.2.4 and 22.2.2.5."

CI 188 SC 188.4.2.7 P80 L16 # 23

Regev, Alon

Keysight

Comment Type TR Comment Status A PCS

The "COMMIT" state is not setting tx\_sym so based on the current state machine, COMMIT will never be transmitted (instead SILENCE will continue during the commit cycle

*SuggestedRemedy*

Add "tx\_sym <= COMMIT" in the COMMIT state

Response Response Status W

ACCEPT.

CI 188 SC 188.4.2.7 P81 L9 # 70

Slavick, Jeff

Broadcom

Comment Type TR Comment Status A Editorial

"not\_done" is not a timer property, just "\_done"

*SuggestedRemedy*

Change "xmit\_max\_timer\_not\_done" to "l\_xmit\_max\_timer\_done" in the ESD -> GOOD\_ESD and DATA -> DATA transitions in Figure 188-5 part b

Response Response Status W

ACCEPT IN PRINCIPLE.

(Editor's note: No change to Suggested Remedy, but Commenter may wish to submit a Maintenance request to also make this change to Figure 147-5.)

Change "xmit\_max\_timer\_not\_done" to "l\_xmit\_max\_timer\_done" in the ESD -> GOOD\_ESD and DATA -> DATA transitions in Figure 188-5 part b



## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

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CI 188 SC 188.4.2.7 P81 L32 # 71

Slavick, Jeff Broadcom

Comment Type T Comment Status A PCS

The unjab\_timer is optional so starting it can only occur when it's supported.

*SuggestedRemedy*

Split the UNJAB\_WAIT into two states.  
TX\_SILENCE with tx\_sym <= SILENCE  
UNJAB\_WAIT with start unjab\_timer.  
BAD\_ESD goes to TX\_SILENCE  
TX\_SILENCE goes to UNJAB\_WAIT with UCT  
Move the dotted box to encompass the UNJAB\_WAIT state and its exit.

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: No change to Suggested Remedy, but Commenter may wish to submit a Maintenance request to also make this change to Figure 147-5.)

Split the UNJAB\_WAIT into two states.  
TX\_SILENCE with tx\_sym <= SILENCE  
UNJAB\_WAIT with start unjab\_timer.  
BAD\_ESD goes to TX\_SILENCE  
TX\_SILENCE goes to UNJAB\_WAIT with UCT  
Move the dotted box to encompass the UNJAB\_WAIT state and its exit.

---

CI 188 SC 188.4.2.9 P82 L16 # 57

Jones, Peter Cisco Systems

Comment Type E Comment Status A Editorial

Improve text clarity.  
The text says "This sequence notifies the receivers" but it's not clear what it notifies them of.

*SuggestedRemedy*

Replace "This sequence notifies the receivers" with ""This sequence notifies the receivers of the transmitter jabber event"

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: Remove double quotes.)

Replace "This sequence notifies the receivers" with "This sequence notifies the receivers of the transmitter jabber event"

---

CI 188 SC 188.4.2.9 P82 L16 # 72

Slavick, Jeff Broadcom

Comment Type T Comment Status A PCS

A PHY who's Jabber function triggers will silence itself. It will do so until it's reset or if it supports the optional unjab\_timer for at least the timers duration. A reset could be shorter than the unjab\_timer.

*SuggestedRemedy*

Change "This sequence notifies the receivers and inhibits further transmissions for at least the duration of unjab\_timer. The PCS Transmit may return to normal operation automatically after unjab\_timer has elapsed and the error condition has been cleared (i.e., TX\_EN has been released). If PCS Transmit does not return to normal, then it keeps silent until reset."

to:

"This sequence notifies the receivers and silences its transmission.

The PCS Transmit remains silent until reset or, when it supports the optional unjab\_timer, after the unjab\_timer has elapsed and the error condition has been cleared (i.e., TX\_EN has been released). "

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: Extra "." and spaces removed from the end of the Suggested Remedy. Changed grammar of first sentence since receivers don't transmit)

Change "This sequence notifies the receivers and inhibits further transmissions for at least the duration of unjab\_timer. The PCS Transmit may return to normal operation automatically after unjab\_timer has elapsed and the error condition has been cleared (i.e., TX\_EN has been released). If PCS Transmit does not return to normal, then it keeps silent until reset."

to:

"This sequence notifies the receivers and silences transmission. The PCS Transmit remains silent until reset or, when it supports the optional unjab\_timer, after the unjab\_timer has elapsed and the error condition has been cleared (i.e., TX\_EN has been released)."

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Cl 188	SC 188.5.3	P90	L24	# 11
Maguire, Valerie				
Copperopolis; affl w/ CME Consulting and Cisco				
Comment Type	T	Comment Status	A	Editorial
It's unclear what exactly "the PMA and PCS Receive functions have at most 800 ns from when the first DME symbol after SILENCE is detected to find the 5B boundary, and to synchronize on the DME stream respectively" is requiring.				
SuggestedRemedy				
Replace "In order to meet the specifications of 188.6.6.1, the PMA and PCS Receive functions have at most 800 ns from when the first DME symbol after SILENCE is detected to find the 5B boundary, and to synchronize on the DME stream respectively."				
with "In order to meet the specifications of 188.6.5.1, the PMA and PCS Receive functions must find the 5B boundary and synchronize on the DME stream within 800 ns of when the first DME symbol after SILENCE is detected."				
Response	Response Status C			
ACCEPT IN PRINCIPLE.				
(removed "must" in remedy to make it a statement of fact)				
Replace "In order to meet the specifications of 188.6.6.1, the PMA and PCS Receive functions have at most 800 ns from when the first DME symbol after SILENCE is detected to find the 5B boundary, and to synchronize on the DME stream respectively."				
with "In order to meet the specifications of 188.6.6.1, the PMA and PCS Receive functions find the 5B boundary and synchronize on the DME stream within 800 ns of when the first DME symbol after SILENCE is detected."				

Cl 188	SC 188.6.2.1	P91	L5	# 113
Schreiner, Stephan		Rosenberger Hochfrequenztechnik GmbH & Co. KG		
Comment Type	T	Comment Status	A	Mixing Segment
Text ends with "TCI". The TCI is a logical interface - and must not be a physical part. Thus, the mode conversion is caused by all parts of the cabling system and the node.				
SuggestedRemedy				
Change "TCI" to "node"				
Response	Response Status C			
ACCEPT IN PRINCIPLE.				
(Editor's note: This test really doesn't only test the cabling system or the TCI. It tests the entire system, including the DTE.)				
Change "electromagnetic interference coupling to the cabling system. Additional differential mode (DM) noise at the PHY is generated from the CM noise by mode conversion of all parts of the cabling system and the TCI."				
to "electromagnetic interference coupling prior to the PHY input. For example, additional differential mode (DM) noise at the PHY is generated from CM noise by mode conversion in the cabling system, including connecting components, and in the front-end interface components within the DTE."				

Cl 188	SC 188.6.4	P92	L37	# 78
Brandt, David		Rockwell Automation		
Comment Type	T	Comment Status	A	Editorial
States: "it is recommended that the PHY provide access to TX_CLK". PICS PMAE8 shows Mandatory.				
SuggestedRemedy				
Change to shall or change PICs to O.				
Response	Response Status C			
ACCEPT IN PRINCIPLE.				
(Editor's note: Two Suggested Remedies are provided.)				
Replace PICS PMAE8 entry "M" with "O".				

## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

CI 188 SC 188.8 P96 L13 # 110  
Law, David HPE  
Comment Type E Comment Status A Editorial  
Suggest that '10BASE-T1M PHYs are designed to operate ...' should read 'The 10BASE-T1M PHY is specified to operate ...'.  
SuggestedRemedy  
See comment  
Response Response Status C  
ACCEPT.

CI 188 SC 188.8.1 P97 L6 # 122  
Brandt, David Rockwell Automation  
Comment Type T Comment Status A Late  
It is unclear if the IL between edge terminations with reference impedance of 100 Ohms is meant to be made with the terminators removed or kept in place. PICS MXS2 does not clarify. The measurement would see the terminator and the line in parallel.  
SuggestedRemedy  
Suggest: "The mixing segment insertion loss, with DTEs or representative simulated DTE loads attached, shall meet the values determined using Equation (188–3), measured between edge termination reference planes by substituting the measurement probes for the edge terminators." Some similar change should be made in the PICS.  
Response Response Status C  
ACCEPT IN PRINCIPLE.

(Editor's note: No change to Suggested Remedy. Add PICS.)

(P97 L26): Change "The mixing segment insertion loss, with DTEs or representative simulated DTE loads attached, shall meet the values determined using Equation (188–3) between edge termination attachment points."

to "The mixing segment insertion loss, with DTEs or representative simulated DTE loads attached, shall meet the values determined using Equation (188–3), measured between edge termination reference planes by substituting the measurement probes for the edge terminators."

Change PICS item MXS2 (P109 L9), by adding "Measurement probes substituted for the edge terminators." to the existing Value/Comment information.

CI 188 SC 188.8.2 P98 L6 # 121  
Brandt, David Rockwell Automation  
Comment Type T Comment Status A Late  
It is unclear if the RL at the edge terminations with reference impedance of 100 Ohms is meant to be made with the terminator removed or kept in place. PICS MXS3 does not clarify. The measurement would see the terminator and the line in parallel.  
SuggestedRemedy  
Suggest: "The mixing segment with DTEs attached shall meet the values determined using Equation (188–4), measured at each edge termination reference plane by substituting the measurement instrument for the respective edge terminator." Some similar change should be made in the PICS.

Response Response Status C  
ACCEPT IN PRINCIPLE.

(Editor's note: No change to Suggested Remedy. Add PICS.)

(P98 L6): Change "The mixing segment with DTEs attached shall meet the values determined using Equation (188–4) at the edge terminations."

to "The mixing segment with DTEs attached shall meet the values determined using Equation (188–4), measured at each edge termination reference plane by substituting the measurement instrument for the respective edge terminator."

Change PICS item MXS3 (P109 L11), by adding "Measurement instrument substituted for the respective edge terminator." to the existing Value/Comment information.

CI 188 SC 188.8.2 P98 L36 # 114  
Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG  
Comment Type T Comment Status A Mixing Segment  
The usage of "simulated DTE load" is different than on other positions in this document. Typically, the "Simulated DTE load" is used to simulate a PHY to the TCI. At this position, it is instead used to simulate a whole DTE including the TCI. The simplest way of performing the measurement would be to connect both cable ends from TC1 and TC2 together. This can be made for all cases. (Not only when the TCI is expected to be incorporated within the DTE).  
SuggestedRemedy  
Change to: The mode conversion loss measurement may be made with the cable segments connected in line.  
Response Response Status C  
ACCEPT.

## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

CI 188 SC 188.8.3 P98 L25 # 123  
 Brandt, David Rockwell Automation  
 Comment Type T Comment Status A Late  
 No instruction is given on where to measure the mode conversion.  
 SuggestedRemedy  
 In ODVA we measure TCL and TCTL with setup similar to RL and IL. Needs some discussion  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Incorporate text changes on slides 7, 9 and 11 of brandt\_3da\_01\_0325.pdf

CI 188 SC 188.9.1 P100 L42 # 124  
 Paul, Michael Analog Devices  
 Comment Type TR Comment Status A Late  
 Ensure that non-powered DTE can pass current without damage when connected to a powered mixing segment. DC resistance through an unpowered node is not specified.  
 SuggestedRemedy  
 Add a section after 188.9.1.3 (188.9.1.4) - TCI line powering current tolerance: The DTE shall withstand without damage the application of any current between -2A and +2A applied across TC1's BI\_DA+ to TC2's BI\_DA+ and TC1's BI\_DA- to TC2's BI\_DA-. Each DTE, including mated connectors and compensation components, adds up to 150 mΩ to the mixing segment loop resistance.  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Add new section 188.9.1.3 TCI DC trunk-connection resistance.  
 (and renumber subsequent sections)

DC resistance from TC1's BI\_DA+ to TC2's BI\_DA+ and TC1's BI\_DA- to TC2's BI\_DA- shall each be less than 75 mΩ including mated connectors and compensation components.

(Ω is ohm symbol)

Add new PICS between existing TC12 & 3:  
 TC13 TCI DC resistance. 188.9.1.3 each less than 75 mΩ including mated connectors and compensation components.

Add a section after existing 188.9.1.3 (now .4), and renumber subsequent section  
 189.1.5 TCI line powering current tolerance: The TCI shall withstand without damage the application of any current up to 2A in either polarity from TC1 to TC2.

Add new PICS between existing TC13 & 4:  
 TC15 TCI line powering current tolerance 188.9.1.5 shall withstand without damage the application of any current up to 2A in either polarity from TC1 to TC2.

CI 188 SC 188.9.1.1 P100 L7 # 116  
 Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG  
 Comment Type T Comment Status A Mixing Segment  
 "0.16 dB" has to digits precision, which might be hard to measure. Additionally, TCI insertion loss might be affected by the TCI return loss change of 189.9.1.2 which has to be considered  
 SuggestedRemedy  
 Change "0.16 to 0.2" (in  $1 \leq f < 10$ ) and -0.454 to -0.494 (in  $10 \leq f < 24$ )  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.  
 Add the following text after equation 188-6:  
 Whenever the requirement results in a value less than 0.2 dB, the requirement shall revert to value of 0.2 dB for measurement purposes.

CI 188 SC 188.9.1.2 P100 L22 # 35  
 Zimmerman, George CME Consulting/ADI, APLgp, Cisco, Marvell, Onsemi, So  
 Comment Type T Comment Status A Mixing Segment  
 "When the TCI is not an MPI," raises the issue that the TCI return loss is related to power. The TCI Return Loss needs to apply regardless of whether the DTE is powered or not. This is true whether or not power is supplied over the mixing segment.  
 SuggestedRemedy  
 Insert the following text at the end of the first paragraph 188.9.1.2. "This requirement applies independent of whether the TCI and PMA are powered."  
 Response Response Status C  
 ACCEPT IN PRINCIPLE.

Insert the following text at the end of the first paragraph 188.9.1.2:

"This requirement applies regardless of whether the PHY is powered."

## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

Cl 188 SC 188.9.1.2 P100 L20 # 115

Schreiner, Stephan Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type T Comment Status R Unit Load

Having TCI return loss specifications in two places - 188.9.1.2 and 189.6.1 is confusing. Additionally, the TCI specifications are given for one unit load of power. Please consider this comment with the following one.

#### SuggestedRemedy

Merge unit load concept of 189.6.1 into 188.9.1.2

Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

The unit load concept only applies when clause 189 is implemented. Moving it to clause 188 would necessitate defining and explaining it here, adding confusion.

Cl 188 SC 188.9.1.2 P137 L # 13

Maguire, Valerie Copperopolis; affl w/ CME Consulting and Cisco

Comment Type E Comment Status A EZ

"e.g.," examples should be contained within parenthesis.

#### SuggestedRemedy

Replace ", e.g., NFPA70– the National Electrical Code® (NEC®) relevant to the maximum class supported." with " (e.g., NFPA70– the National Electrical Code® (NEC®) relevant to the maximum class supported)."

Response Response Status C

ACCEPT.

Cl 188 SC 188.12.4.1 P105 L35 # 73

Slavick, Jeff Broadcom

Comment Type TR Comment Status A PCS

There should be PICS for the unjab\_timer

#### SuggestedRemedy

Add a PICS for the unjab\_timer point to 188.4.2.9 with a Status of O and Yes / NA options

Response Response Status W

ACCEPT.

Cl 189 SC 189.1 P110 L8 # 31

Zimmerman, George CME Consulting/ADI,APLgp,Cisco,Marvell,Onsemi,So

Comment Type E Comment Status A Editorial

The defined entities are listed as MPD & MPSE (in that order), but are described in the reverse order (supply power / draw power).

#### SuggestedRemedy

Change "These entities allow devices to supply/draw power using the..." to "These entities allow devices to draw power or supply power using the ..."

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: Not necessary to mention power twice.)

Change "These entities allow devices to supply/draw power using the..."

to "These entities allow devices to draw or supply power using the ..."

Cl 189 SC 189.1.1 P110 L32 # 32

Zimmerman, George CME Consulting/ADI,APLgp,Cisco,Marvell,Onsemi,So

Comment Type T Comment Status A Editorial

"that incorporate compliant MPoE TCIs" - we call these "MPIs that are also TCIs" and they are "also compatible" with thir Physical Layer standards.

#### SuggestedRemedy

Change "DTEs that incorporate compliant MPoE TCIs are compatible ..." to "DTEs that incorporate MPIs that are also TCIs are also compatible..."

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: Not necessary to say 'also' twice.)

Change "DTEs that incorporate compliant MPoE TCIs are compatible ..."

to "DTEs that incorporate MPIs that are also TCIs are compatible..."

## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

CI 189 SC 189.1.2 P110 L42 # 33

Zimmerman, George CME Consulting/ADI,APLgp,Cisco,Marvell,Onsemi,So

Comment Type T Comment Status A EZ

We only have one pair, so why do we say "over the same pairs as data"?

*SuggestedRemedy*

P110 L42 change "pairs as the data" to "pair as the data" and "dedicated pairs" to "dedicated pair"

P110 L44 Change "When power is provided over the same pairs as data" to "When power is provided over the same pair as data"

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: Need an 'a' before "dedicated pair". Incorporate text proposed in comment #59.)

P110 L42 change "pairs as the data" to "pair as the data" and "dedicated pairs" to "a dedicated pair"

P110 L44 Change "When power is provided over the same pairs as data" to "When power and data are carried on the same pair"

CI 189 SC 189.1.2 P110 L42 # 58

Jones, Peter Cisco Systems

Comment Type TR Comment Status A EZ

Clean up text to remove references to multiple pairs.

*SuggestedRemedy*

Replace "the power may be provided over the same pairs as the data or over dedicated pairs with power only" with "the power may be provided over the same pair as the data or over a dedicated pair with power only."

Response Response Status W

ACCEPT IN PRINCIPLE.

Accommodated by comment #33.

P110 L42 change "pairs as the data" to "pair as the data" and "dedicated pairs" to "a dedicated pair"

P110 L44 Change "When power is provided over the same pairs as data" to "When power and data are carried on the same pair"

CI 189 SC 189.1.2 P110 L42 # 118

Potterf, Jason Cisco

Comment Type E Comment Status A Late

MPoE uses a single pair for power, use of the plural pairs is incorrect unless multiple disparate mixing segments are being discussed.

*SuggestedRemedy*

Alter the following sentences to make pairs singular:

An MPSE or MPD may or may not be co-located with a DTE, and the power may be provided over the same pair as the data or over a dedicated pair with power only.

...

When the power is provided over the same pair as data, the MPI and the TCI are the same connection to the medium and the MPI must also meet the requirements for the TCI needed for the PHY (e.g., see 188.9).

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #33.

P110 L42 change "pairs as the data" to "pair as the data" and "dedicated pairs" to "a dedicated pair"

P110 L44 Change "When power is provided over the same pairs as data" to "When power and data are carried on the same pair"

CI 189 SC 189.1.2 P110 L44 # 59

Jones, Peter Cisco Systems

Comment Type TR Comment Status A EZ

Clean up text to remove references to multiple pairs.

*SuggestedRemedy*

Replace "When the power is provided over the same pairs as data" with "When power and data are carried on the same pair"

Response Response Status W

ACCEPT IN PRINCIPLE.

Accommodated by comment #33.

P110 L42 change "pairs as the data" to "pair as the data" and "dedicated pairs" to "a dedicated pair"

P110 L44 Change "When power is provided over the same pairs as data" to "When power and data are carried on the same pair"

## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

CI 189 SC 189.1.2 P110 L46 # 60

Jones, Peter Cisco Systems

Comment Type TR Comment Status A Power

Clean up text to remove references to multiple pairs.

*SuggestedRemedy*

Replace "when data and power are carried on separate conductors," with "when data and power are carried on a separate pair,"

Response Response Status C

ACCEPT IN PRINCIPLE.

Replace "However, when data and power are carried on separate conductors" with  
"However, when power is carried over conductors that are not also carrying data,"

CI 189 SC 189.2 P111 L44 # 88

Paul, Michael Analog Devices

Comment Type T Comment Status A Mixing Segment

100mOhm resistance through each node is probably impractical at this time. Target 200mOhm instead.

*SuggestedRemedy*

Change 100mOhm to 200mOhm. See presentation mpaul\_da\_02\_20250310.pdf

Response Response Status C

ACCEPT IN PRINCIPLE.  
Change 100mOhm to 150mOhm.

CI 189 SC 189.3 P112 L11 # 4

Maguire, Valerie Copperopolis; aff'l w/ CME Consulting and Cisco

Comment Type E Comment Status A EZ

MPD types is a broad topic, so "discussion of" would be grammatically preferred.

*SuggestedRemedy*

Replace "for further discussion on MPD types" with "for further discussion of MPD types"

Response Response Status C

ACCEPT.

CI 189 SC 189.3 P112 L15 # 37

Jones, Chad Cisco Systems, Inc.

Comment Type TR Comment Status A Unit Load

"The sum of unit load levels on a mixing segment shall not exceed 16"

This shall is the only statement that would make engineered systems non-compliant. I'd like to soften the statement (make it optional) such that someone that has taken the time to understand the limitations and designed a system to exceed 16 unit loads can call it compliant. This statement prevents them from being compliant and simultaneously limits a Type 0 system to 16 W of MPD load and a Type 1 system to 32 W of MPD load (while being able to provide 26 W and 45 W respectively).

As I look at it, the leading text states that a mixing segment can support 16 unit loads and therefore, deletion of this sentence is all the softening needed.

*SuggestedRemedy*

Delete "The sum of unit load levels on a mixing segment shall not exceed 16"

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: The mixing segment still needs to meet the requirements in 188 to support data. PICS needs adjustment as well.)

Delete "The sum of unit load levels on a mixing segment shall not exceed 16"

Delete PICS MS2 at P140 L27 (189.8.4.1)

CI 189 SC 189.3 P112 L16 # 61

Jones, Peter Cisco Systems

Comment Type E Comment Status A Unit Load

The text says "The sum of unit load levels on a mixing segment shall not exceed 16." I don't see how we can mandate this or how it would make sense as a PICS.

*SuggestedRemedy*

Replace "The sum of unit load levels on a mixing segment shall not exceed 16." with "It is recommended that the sum of unit load levels on a mixing segment not exceed 16."

Response Response Status C

ACCEPT IN PRINCIPLE.

Accommodated by comment #37.

Delete "The sum of unit load levels on a mixing segment shall not exceed 16"

Delete PICS MS2 at P140 L27 (189.8.4.1)

## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

CI **189** SC **189.3** P**112** L**26** # **1**  
 Maguire, Valerie Copperopolis; affl w/ CME Consulting and Cisco  
 Comment Type **E** Comment Status **A** EZ  
 Insert space between value and unit  
 SuggestedRemedy  
 Replace "30V" with "30 V" and "50V" with "50 V"  
 Response Response Status **C**  
 ACCEPT.

CI **189** SC **189.3** P**112** L**31** # **87**  
 Paul, Michael Analog Devices  
 Comment Type **TR** Comment Status **A** Power  
 Vpse,min has a typo. This is my unsatisfied comment from last round  
 SuggestedRemedy  
 26 should be 21.6? The numbers for channel resistance and power need to be adjusted if thi parameter moves. See presentation mpaul\_da\_02\_20250310.pdf  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 Accomodated by comment 90:  
 ACCEPT IN PRINCIPLE.  
 Make changes to Tables 189-3 as shown on slide 5 of mpaul\_da\_02\_20250310\_v1.pdf

CI **189** SC **189.3** P**112** L**34** # **92**  
 Paul, Michael Analog Devices  
 Comment Type **T** Comment Status **R** Power  
 check consistency of IPSE\_Min versus iCUt and llimit  
 SuggestedRemedy  
 See presentation mpaul\_da\_02\_20250310.pdf  
 Response Response Status **Z**  
 REJECT.  
 This comment was WITHDRAWN by the commenter.  
 Consistency was checked and no further changes were needed.

CI **189** SC **189.3** P**112** L**34** # **89**  
 Paul, Michael Analog Devices  
 Comment Type **T** Comment Status **A** Power  
 Increase ipse type0 min current for 1.1W devices. This will alignn with 802.3da type0 with ODVA devices.  
 SuggestedRemedy  
 See presentation mpaul\_da\_02\_20250310.pdf  
 Response Response Status **C**

ACCEPT IN PRINCIPLE.  
 Accomodated by comment 90:  
 ACCEPT IN PRINCIPLE.  
 Make changes to Tables 189-3 as shown on slide 5 of mpaul\_da\_02\_20250310\_v1.pdf

CI **189** SC **189.3** P**112** L**36** # **90**  
 Paul, Michael Analog Devices  
 Comment Type **T** Comment Status **A** Power  
 ppse type0 min for 1.1W devices  
 SuggestedRemedy  
 See presentation mpaul\_da\_02\_20250310.pdf  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 Make changes to Tables 189-3 as shown on slide 5 of mpaul\_da\_02\_20250310\_v1.pdf

CI **189** SC **189.3** P**112** L**37** # **91**  
 Paul, Michael Analog Devices  
 Comment Type **T** Comment Status **A** Unit Load  
 ppmd\_1u for 1.1W devices  
 SuggestedRemedy  
 See presentation mpaul\_da\_02\_20250310.pdf  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 Accomodated by comment 90:  
 ACCEPT IN PRINCIPLE.  
 Make changes to Tables 189-3 as shown on slide 5 of mpaul\_da\_02\_20250310\_v1.pdf



## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

CI 189 SC 189.3 P112 L39 # 99

Paul, Michael Analog Devices

Comment Type T Comment Status A Power

Add retrun loss curve modifications to accommodate variable power coupling inductance that tracks unit load value

#### SuggestedRemedy

Add subsection to 189.3. See presentation mpaul\_da\_01\_20250310.pdf for text.

Response Response Status C

ACCEPT IN PRINCIPLE.

Replace the text of 189.6.1 (P 134 L34 to L39) with:

"When the MPI is a TCI, the TCI return loss at TC1 and TC2 shall meet the values determined using Equation (189-x) with the other trunk TC (i.e., TC2 or TC1, respectively) terminated in 100 OHM with a DTE or simulated DTE load present at the TCI."

Insert Equation 189-x, from slide 6 of

[https://www.ieee802.org/3/da/public/0325/mpaul\\_da\\_01\\_20250310\\_v2.pdf](https://www.ieee802.org/3/da/public/0325/mpaul_da_01_20250310_v2.pdf)

replace "RL(f) =" with "RL(f) >=" (greater than or equal to sign).

CI 189 SC 189.4.4 P114 L30 # 62

Jones, Peter Cisco Systems

Comment Type E Comment Status A MPSE

Simplify text

#### SuggestedRemedy

Replace "no MPDs remain attached or there have been changes in the network topology" with "no MPDs are attached"

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: This text describes examples, reducing to a single instance leads the reader to think this should be a point requirement, not an example of why the MPSE might remove power.)

Replace, "For example, the management entity could monitor the mixing segment to determine if no MPDs remain attached or there have been changes in the network topology."

with, "The management entity may set mpse\_enable to disable for any reason."

CI 189 SC 189.4.4.2 P114 L44 # 34

Zimmerman, George CME Consulting/ADI,APLgp,Cisco,Marvell,Onsemi,So

Comment Type T Comment Status A EZ

state names should be all caps (4 instances), also , high state name is incorrect (3 instances)

#### SuggestedRemedy

change "most recent discover\_high or discover\_low" state to most recent

"DISCOVERY\_HIGH\_MARK or DISCOVERY\_LOW state" (P114 L44, 48, and 51)

Change "later discover\_low" to "later DISCOVERY\_LOW" (P115 L2

Response Response Status C

ACCEPT.

CI 189 SC 189.4.5 P120 L19 # 38

Jones, Chad Cisco Systems, Inc.

Comment Type E Comment Status A EZ

paragraph justification has left this line with HUGE spaces. Please fix.

#### SuggestedRemedy

Fix spacing of paragraph.

Response Response Status C

ACCEPT IN PRINCIPLE.

Change:

from:

When the MPSE is presenting a discover low event voltage in any of the DISCOVERY\_LOW states

(i.e., DISCOVERY\_LOW\_PRESENT, DISCOVERY\_LOW, DISCOVERY\_LOW\_ALL, DISCOVERY\_LOW\_TARE, DISCOVERY\_LOW\_TYPE, or DISCOVERY\_LOW\_EVAL), as shown in

the state diagram of Figure 189–3 and Figure 189–4, the MPSE supplies VDiscovery voltage to the TCI

subject to the TDiscovery\_low timing specification.

to:

The MPSE supplies VDiscovery voltage to the TCI subject to the TDiscovery\_low timing specification in any of the following states shown in Figure 189-3 and Figure 189-4:

/editor to format as list/

DISCOVERY\_LOW\_PRESENT, DISCOVERY\_LOW, DISCOVERY\_LOW\_ALL, DISCOVERY\_LOW\_TARE, DISCOVERY\_LOW\_TYPE, or DISCOVERY\_LOW\_EVAL.

(with editorial license)

## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

CI 189 SC 189.4.5 P120 L27 # 39

Jones, Chad Cisco Systems, Inc.

Comment Type E Comment Status A EZ

Need the oxford comma after DISCOVERY\_LOWx, other wise the sentence can be read to say that all the discovery events are DISCOVERY\_LOWx and DISCOVER\_HIGH\_MARKx.

SuggestedRemedy  
please add comma

Response Response Status C

ACCEPT.

CI 189 SC 189.4.5 P121 L2 # 40

Jones, Chad Cisco Systems, Inc.

Comment Type E Comment Status A MPSE

Table 189-3. The additional information column has problems and I think the best way to solv them is to delete the column.  
First, item 9 includes "[Tare]" which appears no where else in this document. Therefore it should be deleted.  
Item 8 has I[Discovery] - I[Mark] with no explanation. Not sure this provides any service to the reader.  
The note in item 11 does have a little information but not sure it's required. We could move it to a footnote of the table if we wanted to keep it, but I'm going to just suggest to delete the column in my remedy.  
Lastly, I'd request that we use the width of the deleted column to widen the "Symbol" column so that the names didn't break across lines.

SuggestedRemedy  
Delete additional information column. Widen "Symbol" column so that names don't break across lines.

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: Items 8 and 9 do not appear in the draft.)

Delete additional information column.  
Delete rows for items 8 and 9 (and renumber)  
Widen "Symbol" column so that names don't break across lines.

CI 189 SC 189.4.5 P121 L25 # 98

Paul, Michael Analog Devices

Comment Type E Comment Status R MPSE

Symbol 'I\_{Type\_presen}' missing a 't'

SuggestedRemedy  
Change the symbols so it says I\_{Type\_present}

Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

(Editor's note: comment #40, deleted this Item)

CI 189 SC 189.4.5 P121 L25 # 41

Jones, Chad Cisco Systems, Inc.

Comment Type ER Comment Status R MPSE

symbol name of item 9 missing a 't' at the end: I[Type\_presen] should be I[Type\_present]

SuggestedRemedy  
Change I[Type\_presen] to I[Type\_present]

Response Response Status Z

REJECT.

This comment was WITHDRAWN by the commenter.

(Editor's note: comment #40, deleted this Item)

CI 189 SC 189.4.6 P122 L6 # 85

Paul, Michael Analog Devices

Comment Type E Comment Status A EZ

Table 189-5 Should be titled MPSE output requirements

SuggestedRemedy  
Change PSE to MPSE

Response Response Status C

ACCEPT.

## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

CI 189	SC 189.4.6	P122	L 11	# 93
Paul, Michael		Analog Devices		
Comment Type	T	Comment Status	A	Power
Vmpse needs to stay consistent with changes we make in section 189.3				
Suggested Remedy				
See presentation mpaul_da_02_20250310.pdf				
Response	Response Status C			
ACCEPT IN PRINCIPLE.				
Accommodated by comment 97:				
Make changes to Tables 189-5 and 189-9 as shown on slide 7 of mpaul_da_02_20250310_v1.pdf				

CI 189	SC 189.4.6	P122	L 11	# 94
Paul, Michael		Analog Devices		
Comment Type	T	Comment Status	A	Power
Pmpse needs to stay consisten with changes we make in section 189.3				
SuggestedRemedy				
See presentation mpaul_da_02_20250310.pdf				
Response	Response Status C			
ACCEPT IN PRINCIPLE.				
Accomodated by comment 97:				
Make changes to Tables 189-5 and 189-9 as shown on slide 7 of mpaul da 02 20250310 v1.pdf				

<b>CI 189</b>	<b>SC 189.4.6</b>	<b>P 122</b>	<b>L 14</b>	<b># 43</b>
Jones, Chad		Cisco Systems, Inc.		
<b>Comment Type</b>	<b>TR</b>	<b>Comment Status</b>	<b>A</b>	<b>MPSE</b>
<p>Table 189-5, items 2 and 4 contradict each other, specifically the max power 100 W numbers in item 2.</p> <p>If my short circuit current is 1.4 A, that means the max power I can deliver is 36.4 W and 63 W from Type 0 and Type 1 MPSEs respectively (and only if I[LIM] is set at the top end of the range, it can be as low as 28.6 and 49.5 W if I[LIM] is 1.1 A). I think we should leave the max power unspecified in the table, replacing 100 with an emdash. Additional information points the reader to 189.4.7 and I think we add a sentence there explaining why it is undefined in the table (we already talk about this a little, just need a few more words).</p>				
<b>Suggested Remedy</b>				

Response	Response Status	C
ACCEPT.		

CI 189	SC 189.4.6	P122	L 19	# 95
Paul, Michael		Analog Devices		
Comment Type	T	Comment Status	A	Power
lilim needs to stay consistent with changes we make in section 189.3				
SuggestedRemedy				
See presentation mpaul_da_02_20250310.pdf				
Response	Response Status C			
ACCEPT IN PRINCIPLE.				
Accommodated by comment 97:				
Make changes to Tables 189-5 and 189-9 as shown on slide 7 of mpaul_da_02_20250310_v1.pdf				

## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

CI **189** SC **189.4.6** P**122** L**20** # **84**  
 Paul, Michael Analog Devices  
 Comment Type **T** Comment Status **A** Power  
 Ilim max and PPSE are in conflict for type 0  
 SuggestedRemedy  
 differentiate item 4 for type 0 and type 1. Add row on item 4 that allows type 1 MPDs to current limit with 1.1A min and 100W / 21.6V = 4.62A max. See presentation mpaul\_da\_02\_20250310.pdf  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 Accomodated by comment 97:  
 Make changes to Tables 189-5 and 189-9 as shown on slide 7 of mpaul\_da\_02\_20250310\_v1.pdf

CI **189** SC **189.4.8** P**122** L**53** # **42**  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type **TR** Comment Status **A** MPSE  
 "The minimum value of I[CUT] is P[MPSE] min/V[MPSE] to ..."  
 P[MPSE] min contradicts Table 189-5 item 11. Either we need to add min to the table or delete it here. I think it needs added to the table and that's gonna be ugly as we need to widen the "min" column to prevent it from breaking the line.  
 SuggestedRemedy  
 Change "P[MPSE]" to "P[MPSE] min" in Table 189-5 item 11.

Response Response Status **C**  
 ACCEPT.

CI **189** SC **189.5** P**123** L**40** # **63**  
 Jones, Peter Cisco Systems  
 Comment Type **E** Comment Status **A** MPD  
 MPDs can draw power without requesting it.  
 SuggestedRemedy  
 Replace "An MPD requesting power from the MPI may simultaneously draw power from an alternate power source." with "An MPD drawing power from the MPI may simultaneously draw power from an alternate power source."  
 Response Response Status **C**  
 ACCEPT.

CI **189** SC **189.5.4** P**129** L**50** # **44**  
 Jones, Chad Cisco Systems, Inc.  
 Comment Type **E** Comment Status **A** EZ  
 "...MPI enters the V[MPD\_mark] specification as defined in Table 189-7..."  
 not sure how we 'enter a specification', I think we meant 'enter the range'.  
 SuggestedRemedy  
 replace 'specification' with 'range'  
 Response Response Status **C**  
 ACCEPT.

CI **189** SC **189.5.4** P**130** L**40** # **5**  
 Maguire, Valerie Copperopolis; affl w/ CME Consulting and Cisco  
 Comment Type **E** Comment Status **A** EZ  
 A comma always follows "i.e."  
 SuggestedRemedy  
 Replace "i.e." with "i.e.,"  
 Response Response Status **C**  
 ACCEPT.

CI **189** SC **189.5.5** P**131** L**35** # **86**  
 Paul, Michael Analog Devices  
 Comment Type **E** Comment Status **A** EZ  
 missing emdashes in 189-9 item 2  
 SuggestedRemedy  
 add missing emdashes in item 2 "Min" column  
 Response Response Status **C**  
 ACCEPT IN PRINCIPLE.  
 add missing Em dashes in item 2 "Min" column  
 Editor to perform a global replacement of En dash with Em dash in empty table cells.

## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

CI **189** SC **189.5.5** P**131** L**35** # **96**

Paul, Michael Analog Devices

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

Update unit power for type 0 consistent with descisions made in section 189.3

*SuggestedRemedy*

See presentation mpaul\_da\_02\_20250310.pdf

Response Response Status **C**

ACCEPT IN PRINCIPLE.

Accomodated by comment 97:

Make changes to Tables 189-5 and 189-9 as shown on slide 7 of mpaul\_da\_02\_20250310\_v1.pdf

CI **189** SC **189.5.5** P**131** L**40** # **97**

Paul, Michael Analog Devices

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

Update input power for type 0 consistent with decisions made in section 189.3

*SuggestedRemedy*

See presentation mpaul\_da\_02\_20250310.pdf

Response Response Status **C**

ACCEPT IN PRINCIPLE.

Make changes to Tables 189-5 and 189-9 as shown on slide 7 of mpaul\_da\_02\_20250310\_v1.pdf

CI **189** SC **189.5.5** P**131** L**44** # **100**

Paul, Michael Analog Devices

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

MPD inrush current is 10mA max. I think we want 10mA typical, we should increase it to 20mA to increase inrush speed and ensure the PD is issuing a TPS report during inrush.

*SuggestedRemedy*

Change item 5 I\_{Inrush\_MPD} maximum to '20'

Response Response Status **C**

ACCEPT.

CI **189** SC **189.5.5** P**131** L**47** # **45**

Jones, Chad Cisco Systems, Inc.

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

last cycle we added Type 0/1 to the document. Table 189-9 item 6 and 7 define the Type voltage threshold, but we make no mention of Type 0/1. It should go without saying that the Type 0/1 should conform to the requirements of the MPD Type that is compatible with the MPSE Type powering the mixing segment. We can make that clear by adding a footnote to the table.

*SuggestedRemedy*

add a superscript 'a' to the parameter column for items 6 and 7.

add note at bottom of table: "a Type 0/1 MPDs conform to the thresholds compatible with the MPSE type powering the mixing segment."

Response Response Status **C**

ACCEPT IN PRINCIPLE.

(Editor's note: The thresholds (items 6 and 7) apply independently and are used as part of the state diagram. For example, dropping below Vtype0\_th will cause any type (0, 1, or 0/1) MPD to mismatch or drop out of the PON\_LOAD\_ON state. A Type 0/1 MPD will use both Vtype0\_th and Vtype1\_th to determine which type MPSE is currently supplying power. You can see this in the PON\_LOAD\_ON exit conditions. It's believed the Commenter is referring to the power supply limits in items 1 through 5 which should be dependent on the MPSE type.)

Add superscript 'a' to the parameter column for item 1.

Add note at the bottom of table: "a Type 0/1 MPDs conform to the power supply limits compatible with the MPSE type powering the mixing segment."

## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

CI 189 SC 189.5.5 P132 L11 # 46

Jones, Chad Cisco Systems, Inc.

Comment Type TR Comment Status A MPD

Revisiting the 180uF max Cport value. I calculated charging times for these caps using our inrush limitations. At 10 mA, we can only charge 10 uF in the 50 ms of minimum inrush time (this is Type 1, 0 to 50V. For Type 0, it's 16.7 uF). Once out of inrush, an MPD can now start drawing operation power. For a one unit load MPD, that would be 40 mA (the rest of the analysis is T1 only. I've left T0 as an exercise for the reader). It would take an additional 212 ms to finish charging the 180 uF at 40 mA. Alternately, an MPD IC could choose to enforce the 10 mA inrush until Cport is fully charged, which would take 900 ms.

The 180 uF number came from the 4P PoE chapters, and that number was picked to signify the point where a PD IC wouldn't need any special inrush consideration, but linrush is 400 mA in those chapters. If we are following that lead, we've failed the reader. To make this match the concept in Clause 33 and 145, 180 should be reduced to 10. And I'd make it 10 per unit load, such that higher power MPDs can have more Cport. We can break item 10 into T0 and Type one and make it 16.7 and 10 if desired.

We can add a new section 189.5.5.5 to explain if needed.

#### SuggestedRemedy

In Table 189-9, item 10, change "180" to "10".

In item 10, additional information, add "per unit load. See 189.5.5.5

add new section 189.5.5.5 as found in companion document cjones\_da\_01\_0325\_V0.pdf.

Response Response Status C

ACCEPT IN PRINCIPLE.

In Table 189-9, item 10, change "180" to "20",

Add to item 10, Additional information "per unit load. See 189.5.5.5"

Add new section 189.5.5.5 as below:

New section

189.5.5.5 MPD C[Port]

The value of C[Port] specified in item 10 of Table 189-9 is the maximum capacitance during POWER\_ON that an MPD can present without requiring extra consideration for inrush control. This value can be charged to V[MPSE] max by I[Inrush\_MPD] within T[Inrush] min. The value of C[Port] is per unit load, meaning an MPD that consumes more than one unit load may scale C[Port] accordingly. An MPD may have a larger C[Port] but in this case the MPD manages the charging of the capacitance to conform to I[Inrush\_MPD] and P[MPD] as required by conformance to Table 189-9.

CI 189 SC 189.6.1 P134 L35 # 12

Maguire, Valerie Copperopolis; affl w/ CME Consulting and Cisco

Comment Type T Comment Status A Unit Load

This requirement is really confusing. I will try to parse what I think it means, but this deserves careful review.

#### SuggestedRemedy

Replace "When the MPI is a TCI, the TCI return loss at TC1 and TC2 shall meet the values determined using Equation (188–7) with the other trunk TC (i.e., TC2 or TC1, respectively) terminated in 100 W with a DTE or simulated DTE load present at the TCI, plus  $10\log_{10}(N_{\text{load}})$ , where  $N_{\text{load}}$  is the maximum number of unit loads for the DTE."

with "When the MPI is also a TCI, the TCI return loss at TC1 and TC2 shall meet the values determined using Equation (188–7) +  $10\log_{10}(N_{\text{load}})$ , where  $N_{\text{load}}$  is the maximum number of unit loads for the DTE. TC1 and TC2 shall meet the values when the other trunk TC (i.e., TC2 or TC1, respectively) is terminated in 100 W with a DTE or simulated DTE load present at the TCI."

note: W = ohms symbol

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: The Suggested Remedy introduces a new 'shall'. Return loss decreases when unit load increases.)

Replace "When the MPI is a TCI, the TCI return loss at TC1 and TC2 shall meet the values determined using Equation (188–7) with the other trunk TC (i.e., TC2 or TC1, respectively) terminated in 100 W with a DTE or simulated DTE load present at the TCI, plus  $10\log_{10}(N_{\text{load}})$ , where  $N_{\text{load}}$  is the maximum number of unit loads for the DTE."

with "When the MPI is also a TCI, the TCI return loss at TC1 and TC2 shall meet the values determined using Equation (188–7) -  $10\log_{10}(N_{\text{load}})$ , where  $N_{\text{load}}$  is the maximum number of unit loads for the DTE. Return loss values at TC1 and TC2 are met when the other trunk connection (i.e., TC2 or TC1, respectively) is terminated in 100 W with a DTE or simulated DTE load present at the TCI."

note: W = ohms symbol

## IEEE P802.3da D2.1 10 Mbps Multidrop Enhancements

CI 189 SC 189.6.1 P134 L37 # 117

Schreiner, Stephan

Rosenberger Hochfrequenztechnik GmbH & Co. KG

Comment Type T Comment Status A Unit Load

plus 10log... indicates, that RL becomes better with more unit loads. Think it should become worse.

SuggestedRemedy

change plus to minus

Response Response Status C

ACCEPT IN PRINCIPLE.

(Editor's note: Editor to paste in the resolution to comment #12 if it is modified by the Task Force.)

Accommodated by comment #12.

Replace "When the MPI is a TCI, the TCI return loss at TC1 and TC2 shall meet the values determined using Equation (188-7) with the other trunk TC (i.e., TC2 or TC1, respectively) terminated in 100 W with a DTE or simulated DTE load present at the TCI, plus 10log10(N\_load), where N\_load is the maximum number of unit loads for the DTE."

with "When the MPI is also a TCI, the TCI return loss at TC1 and TC2 shall meet the values determined using Equation (188-7) - 10log10(N\_load), where N\_load is the maximum number of unit loads for the DTE. Return loss values at TC1 and TC2 are met when the other trunk connection (i.e., TC2 or TC1, respectively) is terminated in 100 W with a DTE or simulated DTE load present at the TCI."

CI 189 SC 189.6.1 P134 L38 # 24

Zimmerman, George

CME Consulting/ADI,APLgp,Cisco,Marvell,Onsemi,So

Comment Type T Comment Status A Mixing Segment

"When the MPI is a TCI" raises the issue that the TCI return loss is related to power. An unpowered MPI might not be considered an MPI, but when it is a TCI it still needs to connect a compliant mixing segment. The TCI Return Loss needs to apply regardless of whether the DTE is powered or not. This is true whether or not power is supplied over the mixing segmen

SuggestedRemedy

Insert the following text at the end of the first paragraph 189.6.1. "This requirement applies independent of whether the TCI and PMA are powered."

Response Response Status C

ACCEPT IN PRINCIPLE.

Insert the following text at the end of the first paragraph 189.6.1:

"This requirement applies regardless of whether the PHY is powered."

CI 189 SC 189.6.1.1 P125 L43 # 119

Potterf, Jason

Cisco

Comment Type TR Comment Status A Late

The Isolation language requires significant updates. An isolation adhoc was propped but not held. To ensure this is addressed, a presentation will be brought to the task force to propose a possible way forward.

SuggestedRemedy

Presentation to follow comment.

Response Response Status C

ACCEPT IN PRINCIPLE.

Make changes to clauses 188 & 189 (but not maintenance on 147) as shown in

[https://www.ieee802.org/3/da/public/032025/SPMD\\_Potterf\\_Isolation\\_Proposals\\_Expanded\\_Clean\\_v04.pdf](https://www.ieee802.org/3/da/public/032025/SPMD_Potterf_Isolation_Proposals_Expanded_Clean_v04.pdf)

CI 189 SC 189.6.2.1.3 P136 L15 # 77

Brandt, David

Rockwell Automation

Comment Type E Comment Status A Isolation

"An Environment C multiport NID does not require electrical power isolation between link segments." Do we mean "mixing segments"? Possibly the NID can have a mix of link segments and mixing segments?

SuggestedRemedy

Change from "between link segments" to "between each mixing segment and other mixing segments or link segments".

Response Response Status C

ACCEPT.

CI 189 SC 189.7.8 P138 L13 # 16

Maguire, Valerie

Copperopolis; affl w/ CME Consulting and Cisco

Comment Type E Comment Status A EZ

"Category" is not capitalized in the ANSI/TIA-568 series of Standards unless it appears at the start of a sentence.

SuggestedRemedy

Replace "TIA Category" with "TIA category"

Response Response Status C

ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general

COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn

SORT ORDER: Clause, Subclause, page, line

CI 189

SC 189.7.8

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3/20/2025 2:33:37 PM

Cl 189	SC Figure 189-8	P129	L 31	# 120
Potterf, Jason		Cisco		
Comment Type	E	Comment Status	A	Late
The state PON_NO_POWER that appears in this state diagram as well as in a few other places in the text should be renamed to PON_IDLE for clarity and parity with the descriptions in the Clause 30 management objects, or another name that is equally descriptive.				
SuggestedRemedy				
Rename PON_NO_POWER to PON_IDLE in figure and in all other instances in document.				
Response		Response Status	C	
ACCEPT IN PRINCIPLE.				
Accomodated by comment #65 which changed the name of PON_NO_POWER to PON_OUT_OF_RANGE				
Commenter may wish to consider whether the clause 30.17.2.1.3 description of MPD idle is accurate.				